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THE FAR EASTERN REVIEW

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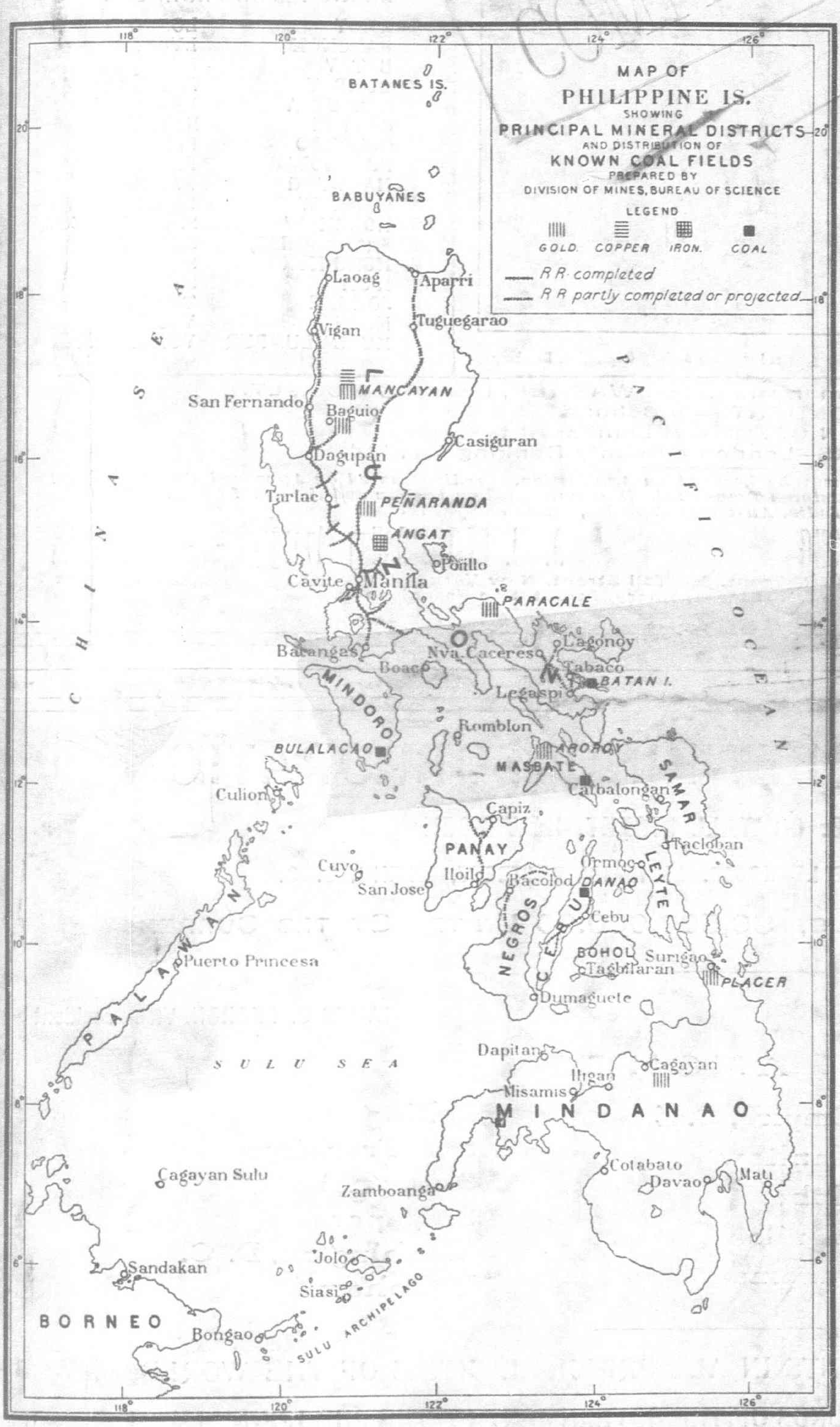

Courtesy Bureau of Science

Philippine Mineral Resources

◆

General News and Comment

◆

Japan in Korea

ENGINEERING
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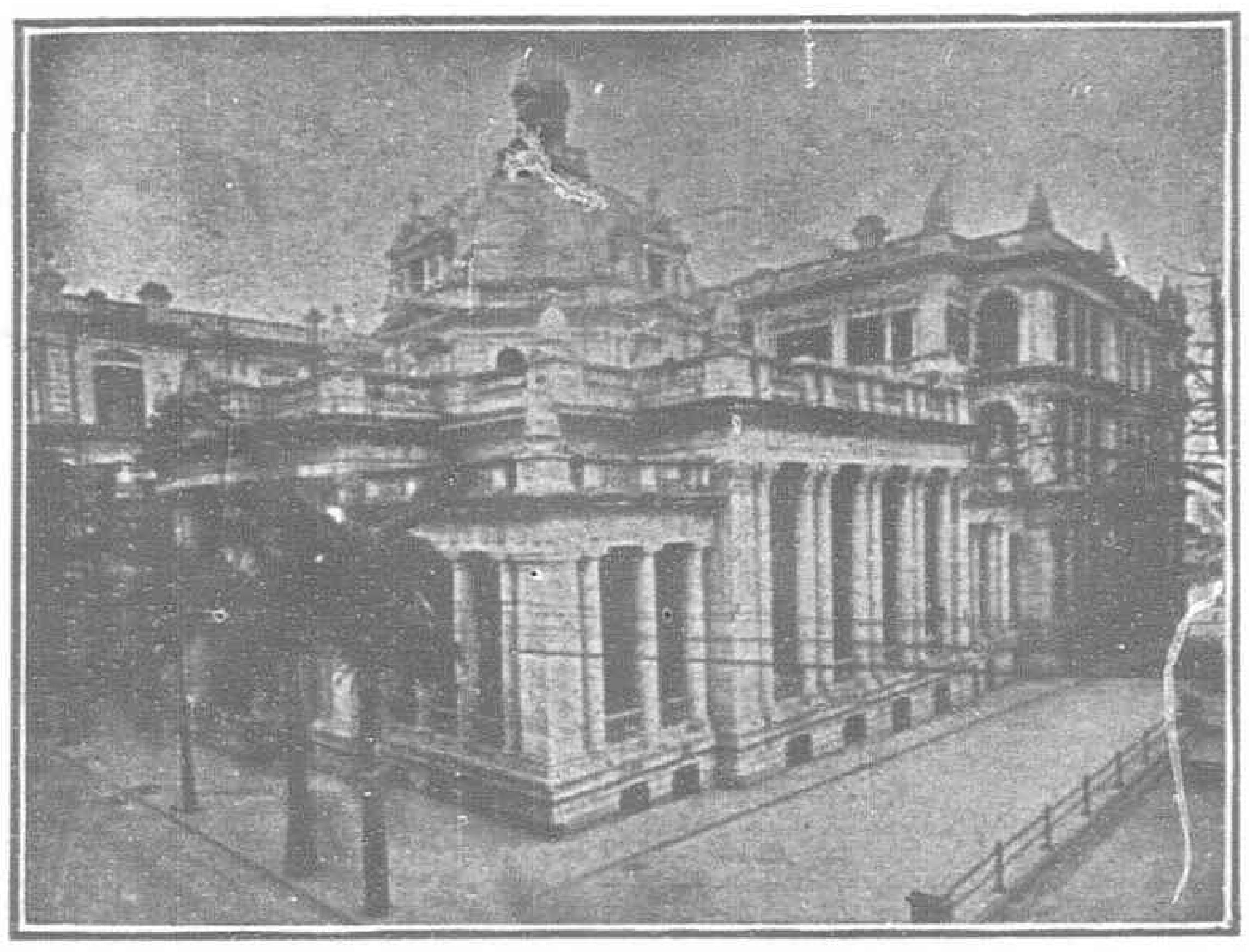

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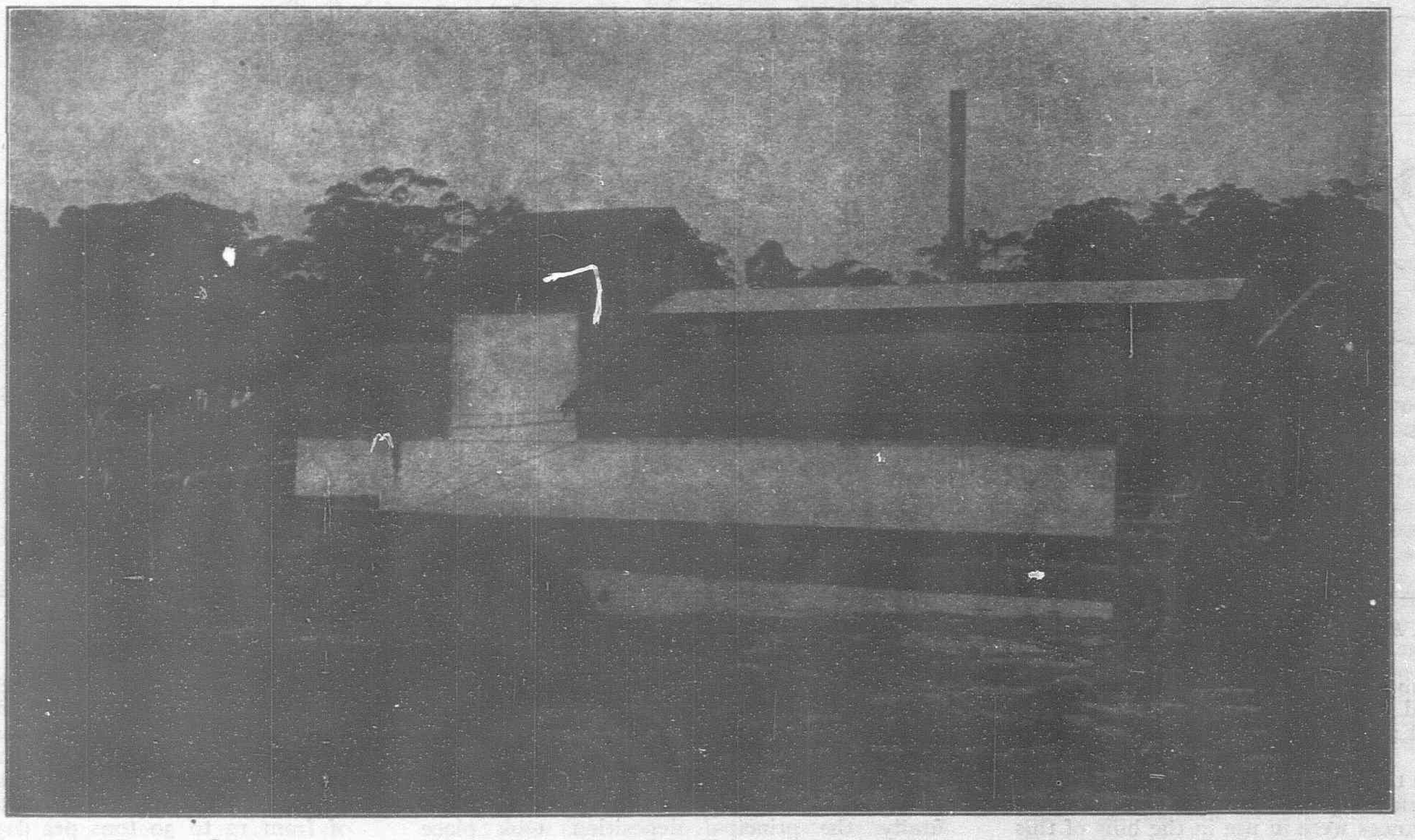
THE FAR EASTERN REVIEW
COMMERCE ◆ ENGINEERING ◆ FINANCE
VOL. VII. MANILA, P. I., SHANGHAI, AND YOKOHAMA, SEPTEMBER, 1910 No. 4.

The Mineral Resources of the Philippine Islands

A comprehensive review of the mineral resources of the Philippine Islands, with a statement of the production of commercial mineral products during the year 1909, has just been issued by the Division of Geology and Mines, Bureau of Science, under the direction of Warren D. Smith, Ph. D., Geologist and Chief of the Division, and through the courtesy of the Director of the Bureau illustrations have been placed at the disposal of the FAR EASTERN REVIEW for reproduction.

In the introduction, the Chief of the Division expresses satisfaction with the development work in this industry and is optimistic as to the future. He writes:



Courtesy Bureau of Science

THE STANLEY DREDGE OPERATING ON THE PARACALE RIVER

"The production of gold in 1909 shows only a slight increase over the preceding year. A careful investigation of the facts demonstrates that this is not an unhealthy sign. The chief cause of the apparent setback in Benguet was due to severe floods which for a time crippled the two largest plants. However, another reason is found in the fact that the operators of mines have reached the conclusion that a larger amount of work than formerly should be expended on development, rather than as at present in operating mills. An encouraging amount of underground work is now being done on the majority of the properties, and in some cases some very large bodies of ore are blocked out. Those who have waited the longest before putting up mills have not only the advantage of large blocks of ore, but also can utilize the experience of others who have operated.

"The increase in the coal output is very satisfactory, as is also the awakened interest in other deposits such as oil, sulphur, and iron. Copper, too, is receiving close attention. Perhaps the greatest interest of the year has been in the Tayabas oil fields. Many claims have been located on the peninsula. Recently an oil rig was shipped to the region, and it is hoped that encouraging results will soon be obtained."

The following statistics are submitted covering the increase in production which have special reference to the output of gold and coal:

TABLE I.—*Mineral production in* 1909
[In pesos (*a*) Philippine currency.]

Source.	Gold.	Silver. (b)	Copper.	Iron.	Manganese.	Coal.
Albay						(*c*) 197,184
Ambos Camarines	216,701					
Bulacan				31,078		
Ilocos Sur	1,425					
Ilocos Norte					12,500	
Masbate	(*d*)					
Mindanao (Surigao)	10,608					
Mountain Province	256,400		(*e*)			
Nueva Ecija	7,200					
Pangasinan	2,500					
Tayabas	360					
Total	495,194			31,078	12,500	197,184

Total metallic with coal	735,956
Total nonmetallic	1,504,091
Grand total	2 240,047

(*a*)One peso Philippine currency is equal to fifty cents United States currency.
(*b*)Some silver generally found alloyed with Philippine gold. None is mined separately.
(*c*)30,336 tons, at 6.50 pesos per ton.

TABLE II.—*Comparative statement of mineral production in* 1907, 1908, *and* 1909.

[In pesos Philippine currency.]

Year	Gold.	Silver.	Copper.	Iron.	Coal.	Manganese.	Nonmetallic.
1907	141,194	95.53	–		26,799		
1908	434,500	2,750.0052		17,500	77,166		815,918
1909	495,194	(*f*)		31,078	197,184	12,500	1,504,091

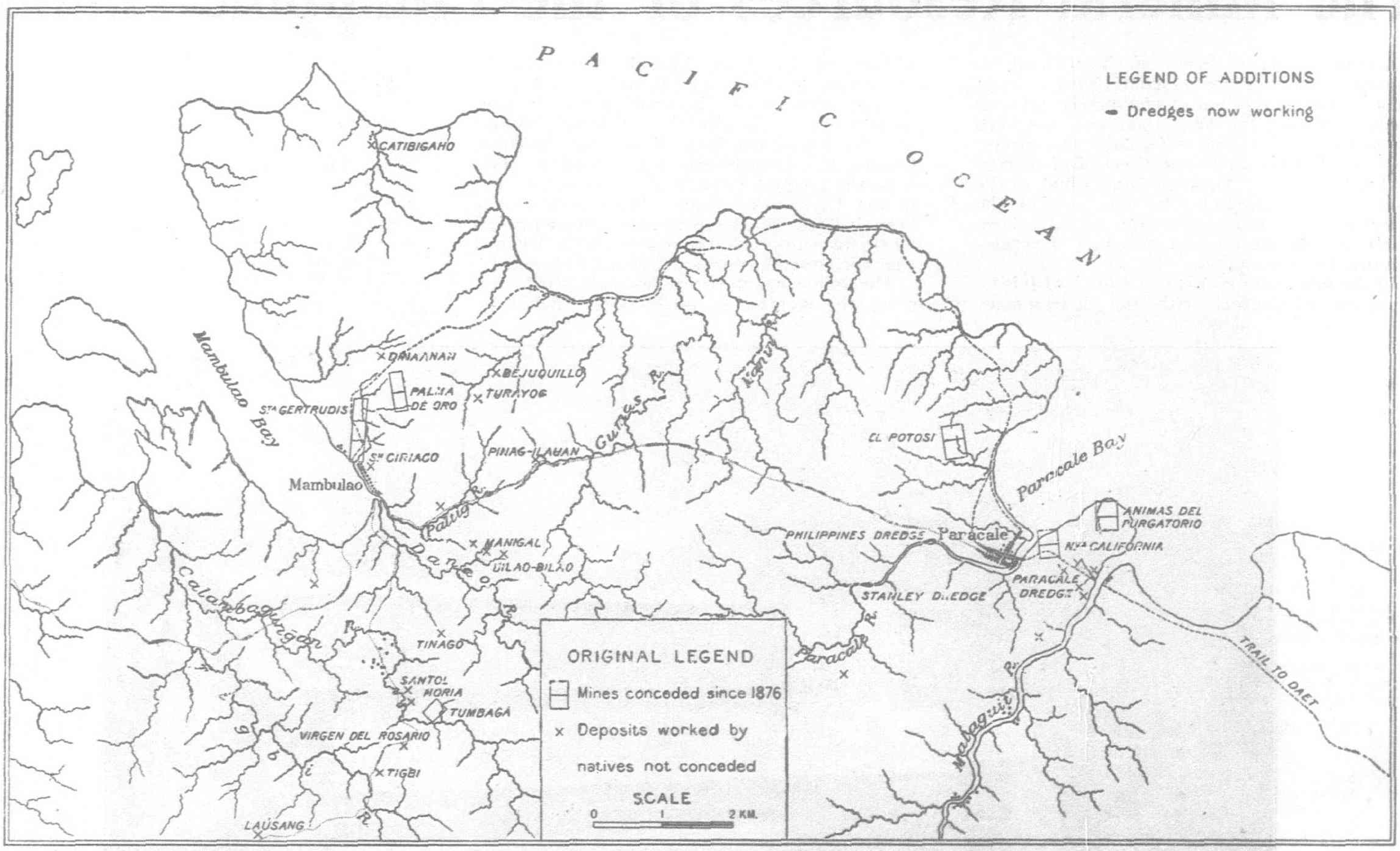
(*d*)No mills running.
(*e*)Small amount smelted by Igorots.
(*f*)Not estimated separately.

*THE GOLD DISTRICT OF PARACALE-MAMBULAO, AMBOS CAMARINES

The Paracale-Mambulao gold field, which has recently been the center of unusual activity in the development of placer and quartz properties, is given an extended review by Warren D. Smith, Ph. D., whose direction of the Division of Mines has been marked by the greatest conservatism and the extreme care taken to secure data at first hand. This field takes second place for the year as a gold producer and there is promise that it will forge ahead very rapidly.

Mr. Smith writes:

"The Paracale-Mambulao gold field has for centuries been known to the natives as rich in gold, and it was exploited in a crude way by the Spaniards by means of arrastres.



Courtesy, Bureau of Science.

OUTLINE MAP OF PARACALE-MAMBULAO DISTRICT

"The first mention of this district of which we have an authentic record was in 1571. Chinese and natives worked the rich streaks and alluvial ground for many years in a crude way, until Spaniards from Mexico taught them to use the arrastre, and a few years before the American occupation nearly a score of these crude appliances were in use in the hills of this district, and small but fairly effective dipper dredges, which could only handle a few cubic meters a day, had been set in operation.

"A large corporation known as the Philippine Mineral Syndicate just before the insurrection had acquired extensive concessions from the Spanish Crown. Operations of modern character were first undertaken on the Tumbaga property.

"This district roughly comprises 400 square kilometers of country of moderate relief. The topography is marked by a number of hills which extend outward as spurs from the cordillera and have approximately a north and south trend. Between these hills are broad valleys to a great extent filled with nipa and mangrove swamps. The whole country is densely wooded. The most elevated point in the district is Mount Bonotan, some 500 meters in height.

"Metamorphic rocks are a prominent feature of this area. The formations to be found are pyroxenite, schist, granite-gneiss, shale, sandstone and andesite from north to south in the order named. The strike of the sedimentaries is roughly north and south and they now stand nearly on end.

"Prior to the Miocene disturbance, which flexed these formations into a more or less vertical position, the section of the strata was probably as follows: At the base a pyroxenite and diorite complex; above this sandstone, shales and possibly limestone, with andesite overlying. With the Miocene uplift came the intrusion of granite, and exposures of the granite cutting across the basic rock can be seen. Along the contact of the two, gneiss and schist were developed. Later on, and probably before the outflow of andesite, there began a period of vein filling and ore deposition. Naturally, the principal deposition took place along the weak zone of the contact and in the fractures adjacent to it. The principal lodes to-day are found normal to this granite-diorite contact. There are many parallel veins running through this granite batholith. The placer deposits are found along the rivers which cut across these veins and are naturally richer near them.

Present Operations.—There was only one dredge in operation in this district at the time the last annual bulletin was published, and all the lodes remained practically as the natives and the former Spanish and English operators (the Philippine Mineral Syndicate) had left them.

Mambulao.—A year ago only the ancient workings and those of the syndicate existed in this part of the district, together with a few recent shafts and tunnels driven as assessment work. Since that time two companies, the Tumbaga and San Mauricio, have been preparing for immediate operation.

Tumbaga.—Tumbaga lies some 2½ kilometers south of the town of Mambulao. The ore body is in a brecciated zone between andesite (porphyry) and impure sandstone, or tuff. The trend of the ore body is northeast-southwest. In this there is considerable slate through which innumerable calcite stringers ramify. Some of these stringers have been found to carry free gold; possibly all of the values may be found to lie in these innumerable veinlets cutting the slate. Although the mineralized zone in places reaches a width of 35 feet, this is not constant. The ore body is lenticular.

"Mr. Cavender, the superintendent, has opened up over 100 meters of drifts and crosscuts, most of which is new work, also a shaft over 15 meters deep, and has constructed a drainage tunnel of over 100 meters. He has also, assisted by Mr. Collins, put into working order the old plant of the syndicate, parts of which were missing and the remainder in considerable disorder, so that he was able to make a test run on his ore. The plant as it now stands consists of the following parts: a Blake crusher; a 5-feet Huntington mill, having a capacity of from 12 to 30 tons per day; two Johnson concentrators; besides the usual accessories—boilers, hoisting drums, skips, etc. According to Superintendent Cavender, a trial run of twenty-two hours was made with this plant in November last. Eleven tons of ore were treated, with the result that 93.6 ounces were cleaned up, which represented merely the free milling part of the ore. The concentrates have not been treated. If these figures are correct, and I have no reason to doubt them, this ore contains some very rich streaks, and there may be found to exist a considerable ore body besides of low grade material.

"San Mauricio.—This property is located 1 kilometer from Mambulao on the hill to the north of the town. The ore body is in part a quartz filling normal to the contact between the granite and the basal rock, which here is more nearly a diorite than a pyroxenite. There also appears to be some ore deposition along the contact.

"About 300 feet of drifts and crosscuts have been opened up, besides that representing old workings, and extensions made by the present company. Besides this development work, a 20-stamp Traylor mill consisting of the following parts has been erected: 20 Traylor stamps, Blake crushers, Challenge feeders, and 8 Traylor concentrators and a Richard's classifier. The stamps are 1,050 pounds each and it is proposed to have them dropped at the rate of 94 times a minute through a 5-inch drop. This mill, for completeness, general plan, and the way it has been set up, should be a model for future mills in these Islands. In October of this year, a severe typhoon raged on this coast and did more or less damage to all the properties. At the San Mauricio the head frame was blown down, but no other serious damage was done.

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* Bulletin issued by Division of Mines, Bureau of Science.

"Other lode properties on which development work has been carried on are as follows:

"Dinaanan, north of San Mauricio; the Le Duc property, southwest of Mambulao; and the group of claims known as the Iron King, Gordon, Isla, Guinto, Abe Lincoln, and Navotas, a different property, all a short distance east of Tumbaga. These are all promising prospects.

"PARACALE.—The present operations in this district are confined almost entirely to placers.

"Since our last report, two more dredges have begun operations on the Paracale River above the Paracale dredge. The Stanley dredge, farthest up the river, is a New Zealand model, operated by New Zealanders. The Philippines dredge is a Risdon make and was operated by an American company. The hull for the fourth dredge is almost completed and plans for the fifth are under way. Of the three, the two New Zealand dredges are running steadily, but I regret to say that the third, up to the present time, has failed to secure results and has temporarily shut down. The Paracale Extension is a new company which proposes to work ground farther up the Paracale River above the Stanley.[1]

"Most of the ground on the Paracale and Malaguit Rivers has been tested and staked. However, as yet no operations have been undertaken on the latter. These rivers lie in broad valleys, covered with mangrove and nipa, through which the dredges work their way. The mangrove is used for the firewood and the nipa is either thrown aside or employed by the natives for house building.

A test hole in an adjacent river, which serves to give a general idea of the ground to be dredged, showed the following strata:

From 0 to 1.5 meters, soil, nipa, etc.
From 1.5 to 7.6 meters, sand and gravel, with some values.
From 7.6 to 11.5 meters, heavy black loam, with considerable decayed vegetable matter.
From 11.5 to 12.2 meters, gravel, pay streak
The bed rock is a white, soft, decomposed granite-gneiss.

In some of the localities the bed rock varies in depth from 3 to 18 meters. In the last few months testing parties have been very active; one working along the following rivers: Tabas, Malaguit, Malagbang, Bosignon, Gumaus, Bulalakao, Colombayungon, Tigbi, Maniloc, and Ponso; others have carried on extensive boring in the Malaguit River, one company having put down over 300 holes, and this is only a small proportion of the total. The Paracale River, of course, has been the most thoroughly tested of all the field, but others, especially the Gumaus, have shown up well in the tests.

"The ground being worked by the dredges now in operation is unusually rich, yielding ₱2 per yard, according to the dredge master's sworn statement, and there are several spots where values as high as ₱14 per cubic yard have been reported. It is not likely that such values will be found in all parts of the district, the richness of certain spots being due to the fact that the river cuts across the veins in these places. This can easily and clearly be seen by an examination of the field relations and of the fresh, crystallized gold as it comes up on the dredge. There is not much doubt but that there is much profitable ground and the district can support several more dredges.

"Many may not be familiar with New Zealand dredging practice, so that a few of its essential features, as I have observed them in this district, are here given.

"Both the Paracale and Stanley dredges use the open-connected buckets and have no stacking ladder, but differ entirely in the gold-saving appliances.

"The Paracale dredge has a revolving screen, side tables and table sluices, expanded metal and coco matting being used.

"The Stanley has no revolving screen and no side tables. It has two sluices copied from pattern of the old tail sluices, one being placed above the other. The dimensions of the first are 75 feet by 4.5 feet, those of the second 65 feet by 3 feet and 8 inches, with a fall of 1.5 inches to the foot. The riffles in the two sluices are about the same, and, beginning at the top, are as follows:

"First Hungarian riffles; then California riffles with a few T-shaped riffles; next undercurrent riffles for the fine gold with coco matting beneath; and finally plates with three-eighths inch holes with 1.5-inch pitch with coco matting and expanded metal under all riffles. A 12-inch pump supplies water for the upper and a 10-inch for the lower one.

"An 8-ton, semi-marine boiler provides the steam for a 70 horsepower Marshall engine, which runs the buckets and the 12-inch pump.

"The essential differences between the New Zealand and the American (Risdon) dredge on the river are:

(1) Absence of the stacking ladder.
(2) Absence of a screen and side tables, in the Stanley dredge.

"The dredges have not been working under similar conditions, and hence it is at present impossible to make any comparison regarding the relative efficiency of the two systems. The persons in charge are well aware that changes will need to be instituted to adapt the process of dredging to the ground. Mr. Jones stated that some of the values are being lost, particularly the fine float gold and that which adheres to the black sand.

"The cost of operation per yard is still high, being close to 30 centavos, but the new dredges will embody several improvements as a result of the past experience with the ground, and a diminution may be looked for. One noteworthy feature at present is the difficulty experienced in amalgamating the gold secured by these dredges. The Paracale Company is installing a Huntington mill to treat the large, rich, quartz bowlders which are constantly being encountered.

"LODE PROPERTIES.—Lode properties are not receiving as much attention in the vicinity of Paracale as near Mambulao; nevertheless development work is being carried on the Germania claim in the foothills north of the Paracale River and on the San Antonio and Empire groups on the peninsula between Paracale and Malaguit.

"Even a casual examination of some of the veins on this peninsula gives rise to the hope that a producing mine will before long be located here.

"Just at present the labor conditions in Paracale are not entirely satisfactory. The Camarines coast is but sparsely settled and but little opened up by commerce, but the conditions should improve.

"At Nalesvetan in the cordillera south of Paracale some new prospects are located and are being vigorously developed by a party of Americans. They have reported some fairly rich strikes from there in the last few months."

*THE BAGUIO MINERAL DISTRICT

This subject has been treated in a comprehensive paper by Frank T. Eddingfield, E. M., mining engineer of the Division staff. The district has led in quartz mining and, while there was a falling off in production owing to damage sustained from severe storms, greater activity in development work has been the feature of the year's operations. Mr. Eddingfield writes:

"American miners have been prospecting in Benguet for ten years or more, but only during the last three years has successful mining been carried on by organized companies; previous to that time the veins had been worked by Igorots, Filipinos from other provinces, and Chinese. Some of these old workings are quite extensive, and have been a great help to the prospectors of today in locating the veins. They are similar to the workings found in other parts of the islands where only the rich stringers were gouged out, and are consequently so narrow that an American would find it impossible to go through them.

"One of the drifts in Mr. Kelley's mine cut an old stope filled with waste that had cemented as hard as the wall rock.

"The mineral statistics show production of gold from the district to have been ₱155,520 in 1907, ₱279,600 in 1908, and ₱243,500 in 1909.

"The figures given for 1909 are estimated from partial data, for nine months' work. The production was stopped in October by floods. The same rate of production would have given about ₱320,000 for twelve months

"These figures to a certain extent show the advance of mining in Benguet, but they give no idea of the great amount of work that has been going on in development. It is estimated that about 300 claims have been located and almost 250 veins uncovered. One company alone claims to have found 132 veins on a group of 31 claims.

"The known mineralized district extends from the headwaters of the Antamok on the north to the headwaters of the Batwaan on the south and from Camp John Hay and the Bued River on the west for a distance of 10 kilometers to the eastward, thus comprising an area of about 75 square kilometers. Outside of this area there is much which is believed to be valuable ground, but as yet unexplored.

"The majority of the veins appear to be true fissure veins in andesite. However, this point is open to further investigation. Toward the south and west contact deposits are reported between andesite and diorite, and andesite and limestone. The veins have a general strike of east and west and a dip of about 60°, usually to the south. They vary in width from 0.3 to 6 meters, reaching a maximum of 15 meters in one case. The classes of vein matter are white quartz, crystallized banded quartz, calcite, calcite and rhodochrosite, brown manganese and quartz, mineralized dikes, and brecciated material. The gold content is about 50 per cent "free milling" in most of the veins, but some of them do not pan a color, as in the case of the telluride ore on the property of Mr. Kelly.

"At the present time there are good wagon roads leading to the Headwaters, Consolidated, Bua and Major mines which can also be used by properties near by. The other groups can only be reached by horse trails.

The majority of the properties are so situated that water power can be utilized, but a few will have sufficient water only during the rainy season. The grades are steep so that "gravity mills" can be built, saving expense in handling the ore, and making it possible to have high heads of water with a comparatively short pipe line and flume. The only serious disadvantages are the dangers of floods or landslides, the difficulties of transportation, and the comparative scarcity of timber.

"The labor situation is perhaps better than in any other mining district. Igorots are easily obtainable for surface labor, road building, packing, and cutting timber; Filipinos from other provinces for miners and mill men, and Japanese for timbermen and carpenters.

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(1) As this Bulletin goes to press it is learned that the Philippines dredge is being moved to the Malaguit River.

*Bulletin issued, Division of Mines, Bureau of Science.

"The average prices, in Philippine pesos, are:

Common labor	per day	₱0.70—	₱1.00
Miners	do.	1.30—	1.70
Native capatas	do.	1.70—	2.50
Japanese timbermen	do.	1.70—	2.50
Japanese carpenters	do.	3.00—	3.50
By contracts:			
Prospect pits	per meter		3.00
Drifting	do.		15.00
Timber:			
Posts 7 feet by 1 foot, each			0.70
Logging 2 to 3 inches by 12 feet, each			0.10
Sawed lumber, per M. feet for labor			45.00
Mining and milling, per ton		5.00—	8.00

"Filipinos from other provinces are preferred to the Igorots for miners and millmen. They give steadier labor and are better workmen. Japanese are used as timbermen in some mines because of their greater strength and adaptability.

"The companies now existing are the Antamok Valley Mining Company, Madison Gold Mining Company, Bua Mining Company, Benguet Consolidated Mining Company, Igorot Mining Company, Muyot Mining Company, Major Mines Company, Copper King Mining Company, Camote-Clayton Company, and Kias Hill Gold Mining Company. In addition, the prominent groups of claims are: the Ebert, Topside, Vicente Volpiedad, Lorenzo Pau, McElroy, Calvin Horr, Murphy, Missionary, and McDill.

"The only companies at present producing are the Benguet Consolidated and the Bua.

"The Bua is working two veins at Gomok, one a quartz vein 0.3 to 1 meter wide, the other a rhodochrosite vein 1 to 2 meters wide, striking north 10° east and dipping 65° to the south. The veins have been opened up by drifts for a length of 166 meters and have been cut 33 meters below by a tunnel 200 meters long.

"The ore is mined by the system of overhead stoping, filling with waste broken during mining. The stope extends the entire 166 meters, and has ore chutes every 10 meters. The ore is dumped into a bin near the mouth of the adit, from which it is trammed for a distance of about 1 kilometer to a second bin, which feeds into a two-bucket gravity aerial tramway, stretching across the Antamok Valley to the mill. The mill is run by a water wheel with a rope drive. It consists of six individual stamps in groups of three, with two copper plates. The tailings are cyanided in six sand leaching tanks, and then dumped into the river. The average value of the ore is said to be ₱14 per ton.

"The Consolidated sustained severe losses in the cyanide plant during the typhoon in the preceding autumn and in consequence has reduced its output until the plant can be refitted. The mine had been working a good strong lead which is said to assay from ₱30 to ₱200 per ton. The lead was opened up on four levels 16 to 26 meters apart, the lower levels being reached by a small inclined shaft with a skip and an underground station.

"The usual feed of the mill was 20 to 25 tons per day. The ore was fed to a crusher, then to stamps and amalgamation plates. The tailings were classified and leached by a sand and slime leaching plant. The leached slimes were filtered in a Ridgway vacuum filter. The introduction of a vacuum filter was a pioneer step in the Philippines and will undoubtedly lead to greater activity along the same line.

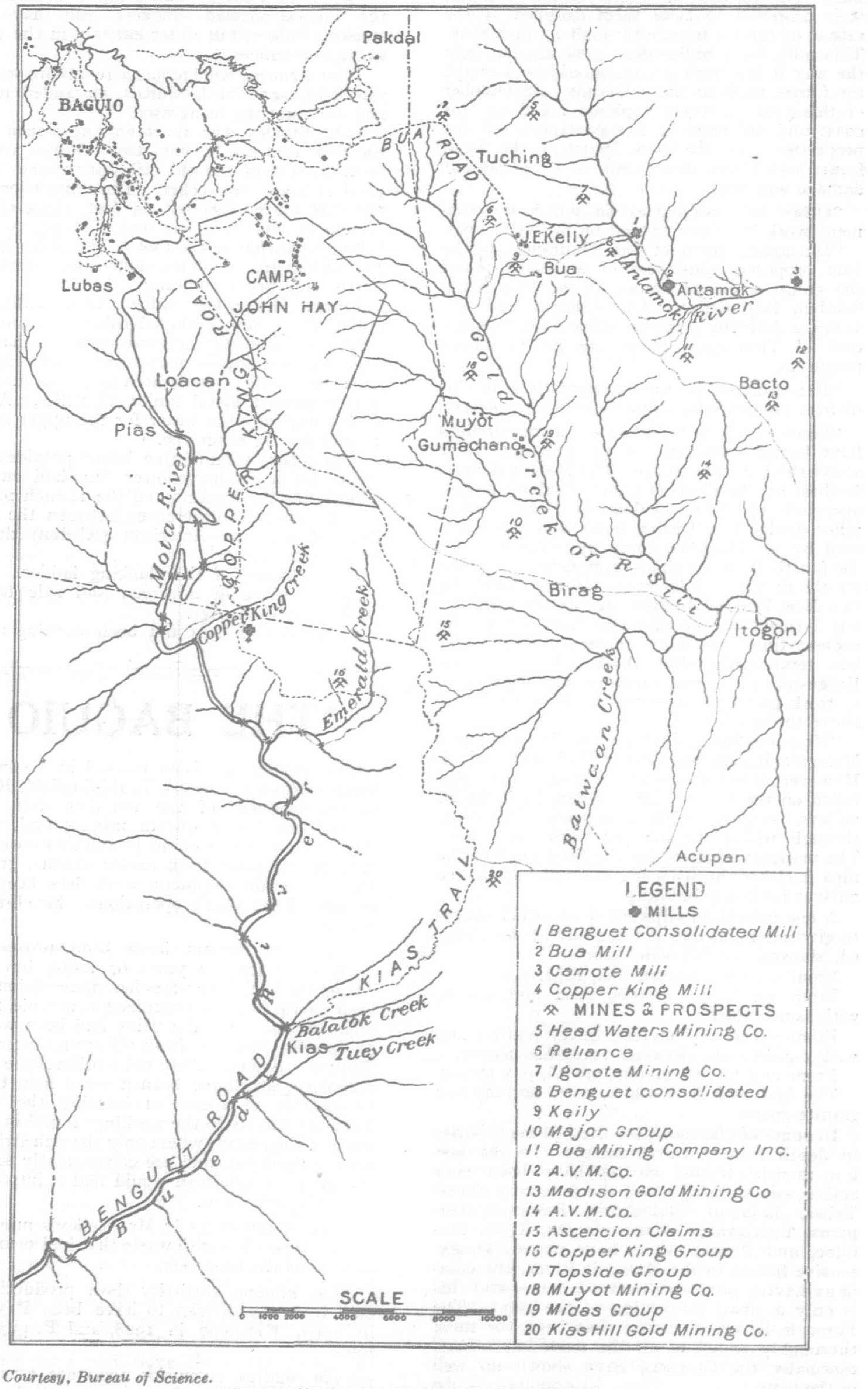
"The Camote is one of the largest ore deposits in the district. The vein is manganese and calcite and is said to average 8 meters in width. A large amount of ore has been developed and 500 meters of working have been driven. It is said to "catch ₱13 on the plates alone." The company lost a 3-stamp mill in the landslide last fall, but they will undoubtedly erect another mill in the near future.

"The Headwaters have put in 1,000 meters of drifts and tunnels, showing four veins which run generally east and west, and dip 45.° They are working 44 men in the mine, 21 on road construction, and are preparing to install a 10-stamp mill, 1,000-pound stamps, tube mills, cyanide plant and a filter press.

"The 'Muyot' has 800 meters of drifts, tunnels and raises in a vein 2 to 10 meters wide said to average ₱12. It is most admirably developed and shows a larger tonnage of 'ore in sight' than any mine in the district.

"The Madison has about 330 meters of work on two veins which are claimed to be the same as the Bua.

"The Topside has 166 meters of work on two veins.



Courtesy, Bureau of Science.

MAP OF THE BAGUIO MINERAL DISTRICT

"The Copper King has 666 meters of work on four veins, varying from 0.3 to 3 meters. This ore contains lead, copper, and considerable free gold.

"The Kelley group on the north slope has four veins: No. 2, north 60° west, dipping 60° to north; No. 3, south 60° west; and No. 4, north 34° west. If these directions maintain, they will all intersect. The intersection of 3 and 4 has already been opened up. The outcrops of these veins are well marked. No. 1, particularly, shows as a strong, high dike on the bank of a stream. One thousand meters of drifting has been done on the veins which vary from 1 to 3 meters and are said to run ₱24 to the ton. They carry no free gold, but are rich in tellurides. On the south slope Mr. Kelley has cut four more veins with 500 meters of workings. These veins run generally east and west and vary from 0.6 to 10 meters in width. About half of the gold in this group is free milling.

"The Major Mines Company has discovered a large number of veins on their property. The No. 3 vein on the Low Potential claim is most unusual. It is made up of bands of crystallized brittle quartz separated by horses of andesite, and having a width of 1 to 3 meters. The majority of the veins on this property pan very high. When in full operation this company should be one of the largest producers in the Islands.

"The Antamok Valley Mining Company has perhaps the largest holdings in Benguet. They have made a large number of tunnels and cut some very promising veins.

"Lorenzo Pau is working 12 claims; Vicente Volpiedad, 6 claims with two or three good leads. Calvin Horr has done a great deal of work proving up several good leads, one of which is 3 meters wide, and is said to carry ₱16. The Camote-Clayton, McElroy, McDill and the other properties all have more or less work done. Some mills are already being erected in the southern part of the district.

"The great number of veins, their uniform directions and dip are significant facts. A peculiarity of the district is that the veins often occur in groups of four.

"The great need of the district is a large mill adapted to the character of the ore, then mining can be done on a sufficiently large scale to make it economical, and there will be enough tonnage in the mill to reduce the cost of treatment. An output doubled means a gain of almost 80 per cent in clear profit. Furthermore, a mine taking out and milling 150 tons a day economically would do much toward bringing in the right kind of capital to the Islands.

"As yet the mineral deposits of the Philippine Islands have only been scratched, and only ore close to the surface taken out. If these districts were found with as favorable locations in the United States, there would not be the slightest delay in establishing an exceedingly active camp in every one of them."

THE AROROY MINING DISTRICT

This district, situated in the northwest part of the Island of Masbate, is made the subject of a paper by H. G. Ferguson, A. M., geologist of the Division, in which he covers the geographical and geological features of that region. Referring to the cost of operations he states that conditions are favorable to cheap mining, the topography allowing considerable exploration by adits, and the ore easily treated. Timber is generally available on the claims and labor supply fairly satisfactory. The important mines are situated less than three kilometers from an excellent harbor and within one day's run by steamer from Manila. He submits the following figures on cost:

"Through the courtesy of the various miners of the district, I am able to give the following figures, in Philippine currency, for exploration and development works:

	Cost per foot.	
Tunnels	₱4.00	₱8.00
Raises	6.00	12.00
Shafts	12.00	30.00

"Small open cuts, from ₱0.03 to ₱0.06 per cubic foot.

"Mr. Eveland, formerly superintendent of the Eastern Mining Company, states in his report on the property as follows:[1]

"Although but few figures are available for the cost of operation of mines, mills, and of ore treatment, under the conditions in the Philippines, it can safely be said that ₱10 ore can be handled on this property at a profit and anything above that will be clear gain. There are no difficulties locally in the way of economic handling of material; in fact, conditions on the ground may be considered almost ideal for operation on a large scale, when extent and value are proven.

"Certainly, a company operating on a sufficiently large scale and conservatively managed should be able to mine and treat ore at this figure or better. The ore is peculiar in that only a small per cent can be amalgamated, probably because of the large proportion of manganese oxide which it contains. Tests made by different laboratories in the United States showed from 25 to 33 per cent of the values recoverable by amalgamation, and it is very probable that in actual practice this would be further lowered. On the other hand, a large proportion is readily recoverable through cyanide treatment, tests made both in this laboratory and the United States show the ore to be remarkably well adapted to this method.[2]

"Work in the Aroroy district has been going on for a sufficiently long time to build up a class of fairly efficient miners, and at present the local supply is sufficient for the demand.

"The wages paid in the district are: For miners, laborers and muckers, ₱0.60 per day if food is furnished, or ₱0.80 without food; foremen, blacksmiths, etc., from ₱1 to ₱2 per day.

"During the next two years, when several companies start operations on a large scale, there may be a temporary shortage of labor, but I do not expect any permanent trouble from this cause, as men are beginning to come in of their own accord from northern Panay and Sibuyan and there should be no great difficulty in importing other labor if it becomes necessary.

Mr. Berkenkotter, the manager of the Syndicate Mine, tells me that under average conditions nine men working three to a shift six days in the week, and doing their own mucking, can advance a tunnel 1 meter per day in porphyry and one-half meter per day in hard, fine-grained rock.

Reviewing the history of placer mining in Masbate Mr. Ferguson says:

"In 1905 a dredge belonging to the Oriental and Masbate Dredging Company, was put on the Guinobatan River below the gorge. However, no exact prospecting or testing of the ground had been done, and the dredge was unable to reach bottom. The returns were small and the dredge did not run for more than a few months.

"The dredge constructed on the Lanang River has had numerous difficulties, including severe damage to a pontoon by a typhoon, and has been idle since 1908. The ground is now being thoroughly prospected and if results are favorable it is probable that the dredge will be rebuilt. A promising field for placer mining which has not as yet been much prospected is the gravel beach lying up the stream from the first gorge of the Guinobatan.

"DEVELOPMENT WORK.—The following is a brief summary of the more important work done in the district up to December 31, 1909. The Keystone Mining Company on Aroroy

Courtesy Bureau of Science.

RELIEF MAP OF AROROY DISTRICT.

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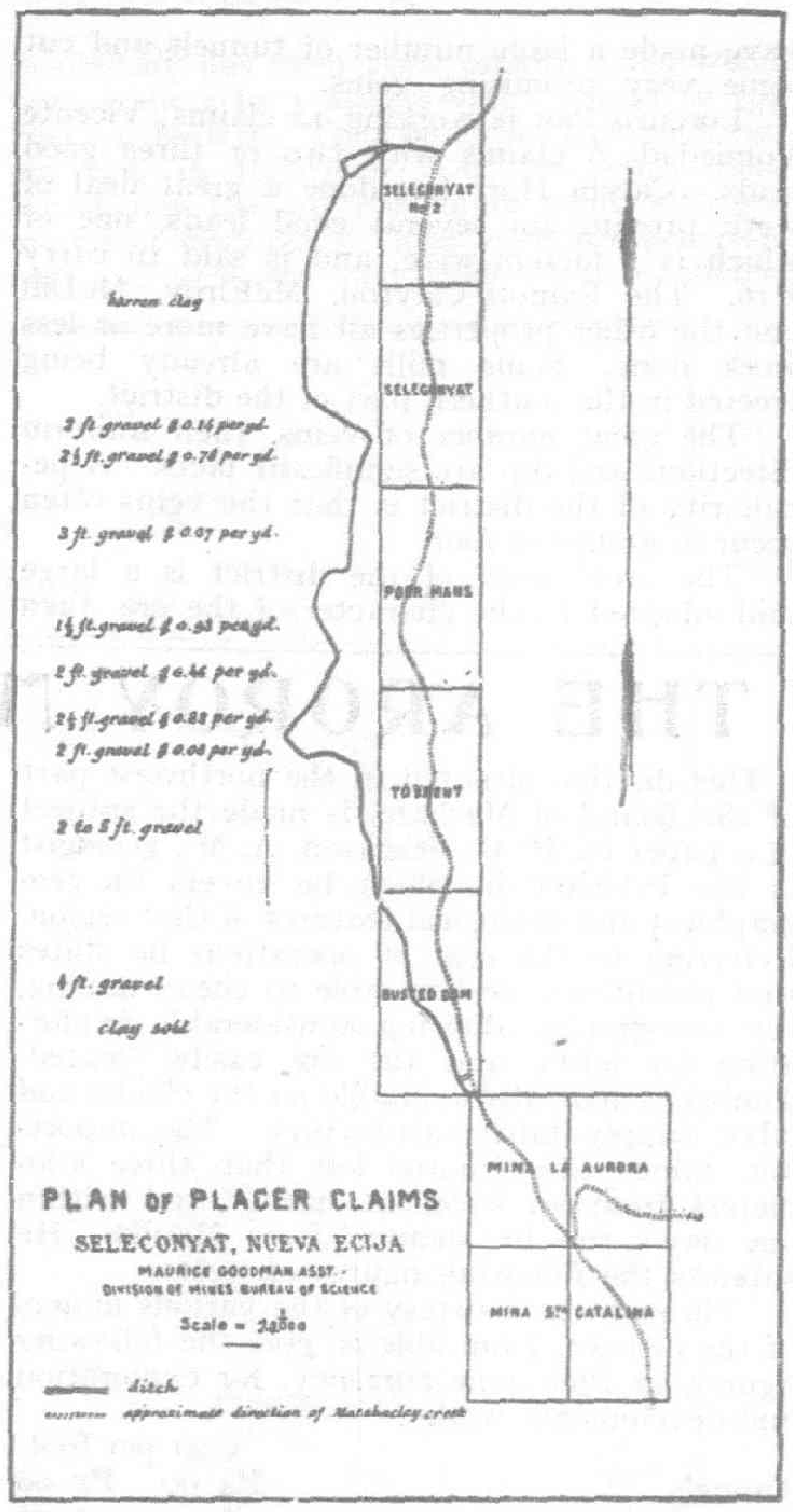
(1) FAR EASTERN REVIEW (1907), 3, 333.

(2) Mr. Eye, superintendent of the Colorado Company, plans to do away with the plates entirely in the 20-stamp mill which that company is preparing to erect and have the stamps crush in the weak cyanide solution.

Mountain has two shafts in ore. These are connected by means of a drift, and a crescent tunnel from the southern side of the hill to meet the upper shaft is being advanced. The principal workings of the Colorado Mining Company consist of two adit levels connected by an inclined shaft in the foot wall 60 meters deep. From the second level there are foot-wall winzes. Crosscuts have been made at intervals on both levels. The Syndicate Mining Company, operating the claims of the Eastern Mining Company on Kalakbao Hill, has done development work on three claims. The earliest extensive work, on the Have Got claim, consists of a crosscut tunnel now caved at the surface, a raise to the surface and drifts. The Nebraska Star has a crosscut tunnel 60 meters long, a raise 30 meters to the surface, and 150 meters of drifts on four veins, and about 50 meters of crosscut levels; on the upper a crosscut tunnel cuts two veins and there are drifts, crosscuts, and a raise to the surface. The Aroroy Mining Company was organized last year and has taken over four groups of claims, including the property of the former Gold Bug Company. Operations so far have been rather in the nature of prospecting than of development. Considerable work has been done in constructing prospect tunnels, open cuts, etc., on the Gold Bug, California, El Sol, Montana, Gilt Edge and other claims. The Tengo Mining Company, successor to the former Mount Cogran Company, has begun development work in a systematic manner. The vein is now being crosscut in several places, and when sufficient ore has been blocked out, the mill will be put in shape for use.

"Taken altogether, the district at the close of the year 1909 is in a more satisfactory condition than it ever was previously. This is the first time for several years that no production has been reported, but that of former years was premature and the gold was obtained at great expense. If the work in the district continues on the lines now being followed, production should begin again in another year, and it should not be long before several large and profitable mines are operating."

* THE GOLD PLACERS OF NUEVA ECIJA


SELECONYAT No 2
barren clay
SELECONYAT
2 ft. gravel $ 0.14 per yd.
2½ ft. gravel $ 0.74 per yd.
3 ft. gravel $ 0.07 per yd.
POOR MANS
1½ ft. gravel $ 0.93 per yd.
2 ft. gravel $ 0.46 per yd.
2½ ft. gravel $ 0.82 per yd.
2 ft. gravel $ 0.08 per yd.
TORRENT
2 to 8 ft. gravel
4 ft. gravel
clay soil
BUSTED BUM
MINA LA AURORA
MINA STA CATALINA
PLAN OF PLACER CLAIMS
SELECONYAT, NUEVA ECIJA
MAURICE GOODMAN ASST.
DIVISION OF MINES BUREAU OF SCIENCE
Scale = 1/24000
ditch
approximate direction of Macabacley creek

"The gold placers of Nueva Ecija have not received much attention, although they have been known and worked for sixty years or more by foreign capital.

"It is reported that a Spaniard, fifty years ago, worked placer ground at a point about halfway between Cabu and Peñaranda on the Sapang Bujoy. A map of Luzon, by D'Almonte, published in 1883 has marked upon it six points in this district where gold had been found, one on the Sapang Bujoy, two on the Macabaclay, two near the junction of the Rio Chico and the Sumagbac, and one near the head of the Santor or Cornell River. No further information about these points could be found; but these publications indicate that gold must have been produced in noticeable quantities.

"An Englishman about 1890 did some work near the head of the Cabu River at Bakas. At that time also, a company was formed in Manila which started work on the Macabaclay with a crude sluice. Its operations were terminated by the insurrection of 1896 and no more work was done until Mr. Dorr, who had been employed by this company, resumed work in 1905. His operations are fully described in Mr. Goodman's report.[1] Very soon after Dorr's return two miners, Neill and Brown, worked the ground near the head of the Cabu, but with little success.

"No other records of work done by white men previous to 1909 could be found; but natives have worked the gravels for ages by hand panning and hundreds of them at present have no other occupation. They resent the influx of Americans and do not try to conceal their dislike. Their attitude recently has been so hostile that precautionary measures were taken by the Constabulary in the district.

"A number of men from Manila this year have formed a company and located claims on almost every stream between Cabu and Gapang. They tested the ground near Peñaranda with a boring machine and will undoubtedly test many more of their holdings in the near future. These boring tests were reported as showing 33 centavos per cubic yard. Pan tests in other localities gave much higher values, ranging from 50 centavos to ₱1. Such ground when worked on a suitable scale will give good returns on the money invested.

"One of the most interesting features in all parts of this region is the presence of platinum in small quantities. The natives were ignorant of its value and always threw it away when they separated it in their pans.

"The area in which paying amounts of gold can be found is very large, extending from the Eastern Cordillera to the Rio Grande de Pampanga, between the Santor River and a line 6 miles south of the Rio Chico, about 600 square miles. There is a bed of sand and gravel which seems to cover this entire area, possibly produced by constantly shifting streams. This explanation of the origin seems more probable because of the great number of streams which seem to head from about the same source in the eastern Cordillera, and all of which carry gold even to their mouths. These streams are the Rio Chico, Ilog Muntí, Sapa Palanao, Cornell or Santor, Mayon, Macabaclay, Pagsanjan, Calabasa and Cabu, which flow into the Rio Grande.

"Assuming the Eastern Cordillera between the head of the Cabu and the Santor to be source of the gold, then similar placer ground probably occurs on the eastern slope of the mountains as well, possibly on the Ibonan River. This possibility has never been thoroughly investigated, partly because of the warlike people, termed Mambulaos and Ibilaos, who live in the hills surrounding. This assumption regarding the origin differs from that made by Mr. Goodman, who placed the source of the gold in the Caraballo Sur. A layer of clay called a "false bottom," which overlies another bed of pay ground, is located underneath the gravel bed which carries the gold. The total distance to bed rock varies from 8 to 13 meters in general, but near the head of the Cabu it is very small and in a great many places the water has cut through and worn a channel in the bed rock. A mining man from that point reported the bed rock to be lava. Mr. Goodman discusses this in greater detail.

"Black sand is found everywhere in large quantities, and its presence might prevent the successful exploitation of a great part of the ground.

"Mr. Neill, who has worked the ground near the head of the Cabu, found it necessary to clean up his riffles once every three or four hours. Further down, however, the percentage of black sand diminishes, and the ground near the mouth of the Cabu, and at Peñaranda is considered very promising. Mr. Neill states that the gold floats on the water and a large percentage is lost; and that because of its physical condition it will not amalgamate unless altered by some preliminary treatment; besides this, the clay is very troublesome and necessitates considerable washing. These difficulties might be overcome, but a great one would be encountered in the wrecking of a dredge which might be washed away by floods, or typhoons, which occasionally occur and from which there is no apparent protection. Furthermore, during the dry season most of the streams are practically without water, so that good dams would have to be built to hold the quantity which does flow.

"In other respects the district is well situated for dredging. It is near a railroad so that supplies can be readily obtained and it is near good forests where suitable timber for construction can be found."

"Other Districts (Gold).—Mr. Eddingfield furnishes the following reports from other sections of the islands where locations have been made:

"Catanduanes.—Interest has lately been revived in the gold deposits of this island. Prospectors from the Paracale district have recently visited and explored it, reporting very favorably on the prospects. They found evidence of former mining by Spaniards or natives in the northern part, and this is usually an indication of rich deposits. Some placer ground was also found which might prove to be profitable. Coal deposits were also reported.

"Ilocos Norte.—One prospector, Mr. Burdette, has located a gold vein east of Bangui and is at present exploring and developing it. So far no rich deposits of gold have been found in this province, which heretofore has been known chiefly for asbestos, manganese, and guano.

"Mindoro.—Mindoro has been explored by several prospectors during the last few years, and a company was once formed to work some of the ground. Placer deposits are found on the west and north coasts, some of them are said to be suitable for sluicing. Very little is known of the geology of the interior of this island.

"Mindanao.—The country around Surigao for several years has been prospected for gold at intervals and recently two miners worked some ground for a short time, with fair returns. The placer ground is said to be very good and the gold very coarse, but conditions have been unfavorable and prospecting in the interior dangerous. Several prospectors are at present again testing the ground.

"Placer ground has long been known near Cagayan de Misamis on the Cagayan, Iponan, and Pigholugan Rivers. Old Spanish reports of 1877 speak of these localities. Recently two parties have been relocating the ground and testing it with boring apparatus.

"Pangasinan.—For the past year or two the copper deposits of western Pangasinan have been neglected by prospectors as their energies have been directed toward the gold deposits in the eastern part of the province near Binalonan and Pozorubio. Manila capital has become interested in some of these prospects and it is the intention to develop them.

"Tayabas.—Two prospectors, Messrs. Bode and Villiger, have located a number of claims near Guinayangan. They state that they have found several good gold-bearing veins and a large area of placer ground. The gold brought from these placers is fairly coarse and of a good color. This district is directly opposite Paracale, across the tail of Luzon and may be in the same mineral belt.

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*Excerpt from paper by F. T. Eddingfield, E. M., Mining Engineer, Division of Mines

(1) FAR EASTERN REVIEW (1907), August.

*THE MANCAYAN-SUYOC DISTRICT, MOUNTAIN PROVINCE

"The deposits of Mancayan, as is the case with all the others in the Philippine Islands, have been worked for years past by natives, in this case by Igorots, possibly by Chinamen, and to a very large extent by Spaniards.

"The natives extracted the copper from the ore by a laborious process, and manufactured most of their cooking utensils from it. They also became quite expert in making counterfeit copper coins which were used even after the Americans took possession. The Spaniards worked out huge rooms and cavities in the Santa Barbara mine, taking out only the very rich ore found in stringers and pockets, which ran from 40 to 60 per cent of copper. This ore was smelted in crude furnaces at the mine; probably less than 50 per cent of the copper in the ore being recovered.

"These deposits at the present time, at the points opened up, seem to show the characteristics of a quartz-prophyry in one case and an andesite in another, both of which have largely been replaced by silica, fractured by subsequent action and enriched along the fissures thus made with secondary copper, which may be supposed to have come from a copper-quartz vein somewhere in the formation.

"There appear to be three bodies of ore varying from 18 to 150 meters in width. These bodies run parallel and only about 100 meters apart; they can be traced for about 4 kilometers on the surface in a northwest-southeast direction from the foot of the hill north of Mancayan to Pocta Creek and beyond. Pocta Creek cuts the three veins which stand out with great distinctness above the bed of the stream. It is here that the character of the deposits is best seen.

"The values are unevenly distributed throughout the bodies. In one case a strip 40 meters wide on the eastern part of the ore body carries 2 to 3 per cent, while the remainder of a total width of 130 meters is barren. Another section has about 2 per cent for its entire width of 130 meters.

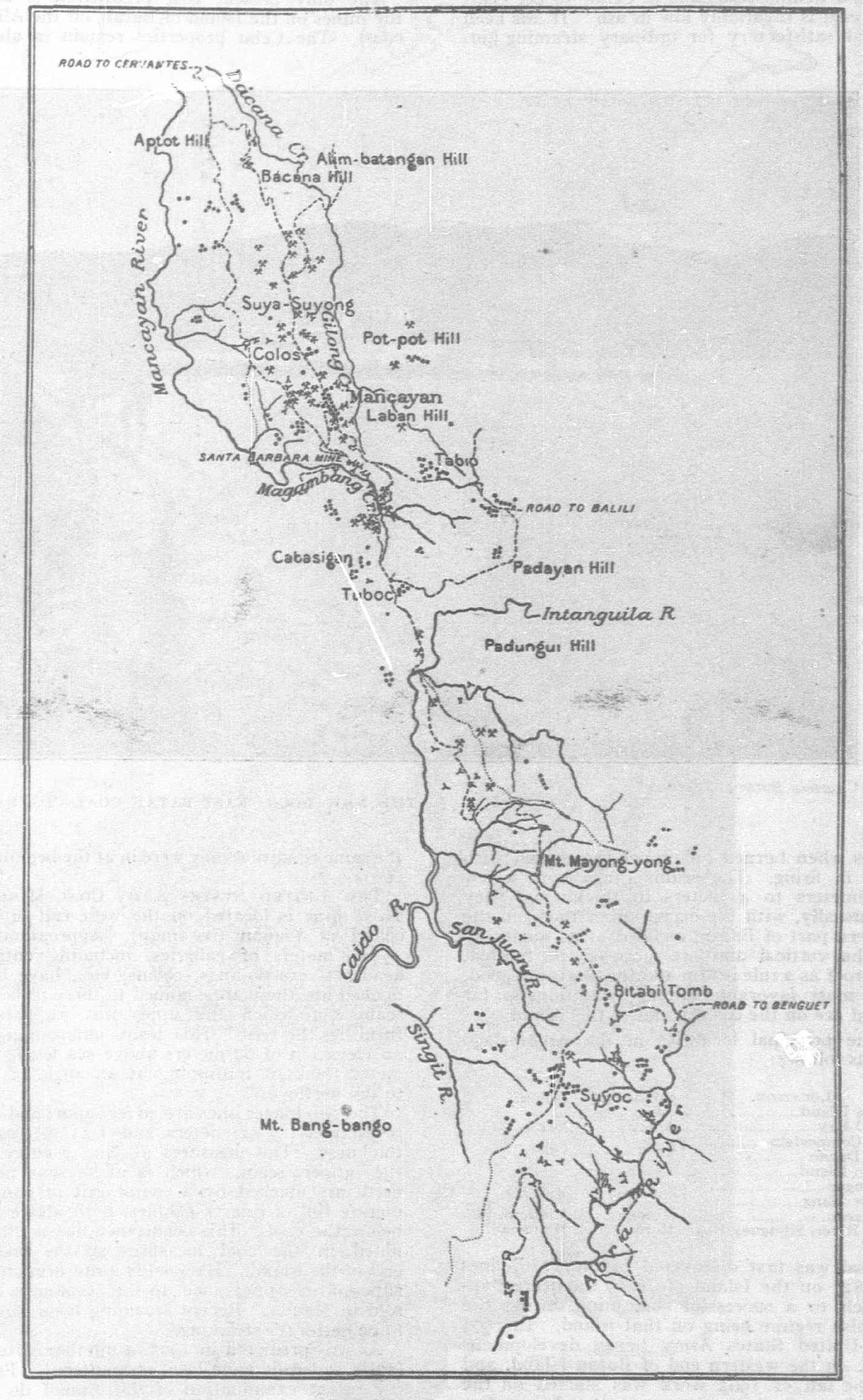
"The Santa Barbara is the only property on which mining has been done. From 2,000 to 3,000 meters of tunnels and drifts has been driven in this deposit by the Spaniards and the American successors to the property. The Spaniards must have taken out several hundred thousand tons of ore, working only the rich stringers and pockets. These stringers contain tetrahedrite, bornite, luzonite, chalcopyrite and some oxides. The stringers vary in width from a few centimeters to over a meter in some rare cases, and strike at an angle of almost 30° to the main body, although one or two veins lie parallel to it.

"There are five levels embracing a vertical height of over 60 meters. The lowest of these, the drainage tunnel, has over 300 meters of development. A crosscut in the north end exposes some very rich ore in what appears to be a rather large pocket. Small stringers are also found at various other points on this level. This point is emphasized because of a contrary statement which appears on page 51 in *Bulletin No.* 4 of the Mining Bureau, by Mr. Eveland, who was unable to reach all parts of this level on account of the condition of the drifts.

"Some claims, owned by Mr. Gaffney, lie to the north of the Santa Barbara. He has done about 500 meters of development work on seven of these claims, exposing some very good low-grade ore. In the "Oriental" claim he has cut 20 meters of ore.

"South of the Santa Barbara are properties owned by Messrs. Chambers, Muller, Wright, and Pettit on which more or less work has been done. Messrs. Chambers and Muller have cut an ore body 160 meters wide, said to carry 2 per cent of copper, which appears to be the central body of the three. Some work has also been done on the outcrops on Pocta Creek. South of this but little copper has been found.

"Numerous veins which carry gold, silver, and some copper occur at Suyoc. They are in general true fissure veins with quartz filling, 1 to 6 meters wide, occasionally having stringers of calcite along the walls, and they are said to carry from $10 to $50 per ton in gold alone. The gold appears for the greater part as a telluride, but it occasionally is found free, and associated with zinc, lead, copper, iron, and manganese.



Courtesy Bureau of Science. MAP OF MANCAYAN-SUYOC DISTRICT

"The veins are found in conglomerate, in diorite, in andesite, and in andesite-breccia. The fissuring seems to have occurred after the formation of sedimentaries and was probably caused by the intrusion of the Bagan granite which lies to the west

"The values which are encountered in stringers of rich ore could readily be concentrated. The 'Elizabeth,' 'Anaconda,' and 'Quien Sabe' are all properties that show great promise.

"The ore, both copper and gold, seems to call for concentration and smelting by the usual class of mill and smelter suitable for the purpose. Cyaniding might be used with the gold ores, although their high copper content seems prohibitive.

"The Mancayan copper deposit will be workable by quarrying for a great many years, but the gold veins will need to be mined in the usual way because of their width. However, the work should be cheap since so great a depth can be reached with drifts or tunnels"

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*By Frank T. Eddingfield, E. M

*PHILIPPINE COAL

After nearly a decade of prospecting and preparation under the new régime, including a number of false starts, two coal mines are now in operation in the Philippine Islands. These are both situated on the small island of Batan, Province of Albay, Luzon.

Coal in the Philippines occurs with Tertiary shales and sandstones on nearly every island of the Archipelago, with the greatest development in the Visayas. The coal is classed as sub-bituminous. The highest percentage of fixed carbon yet recorded is in a sample from the old Compostela mine in Cebu, 54 per cent. The coal is invariably low in ash It has been found satisfactory for ordinary steaming purposes when burned on proper grates and with care in firing. The seams range from a few centimeters to 4 meters in thickness. They are usually, with the exception of those on the eastern part of Batan, inclined at all angles up to the vertical and are more or less faulted. The roof as a rule is firm and the cleats are good. The most favorable mining conditions so far found are on the eastern end of this island.

The principal localities in the Archipelago are as follows:

LOCATION.	Province.	Island.
Batan Island	Albay	
Sugod Bay	Albay	Luzon.
Near Compostela	Cebu	Cebu.
Near Danao		
Polillo Island	Tayabas	
Cataingan	Sorsogon	Masbate.
Dimas Alang		
Bulalacao	Mindoro	Mindoro.
Silay River, Sibuguey Bay	Moro	Mindanao.

Coal was first discovered in the Philippines in 1827 on the Island of Cebu, the nearest approach to a successful coal mine during the Spanish régime being on that island. In 1904 the United States Army began development work on the western end of Batan Island, and in the fall of 1905 work was started on the East Batan Coal Company property. It is understood that operations will soon be resumed on the old properties near Compostela and Danao, on the east coast of Cebu. Vigorous exploration was recently begun in the eastern portion of Masbate Island but in the other localities little is being done at the present time.

COAL IN ALBAY PROVINCE.—The coal industry in the Philippines has now passed beyond the stage of prospect. Development and production have begun.

Development work will soon be renewed on the old Spanish properties near Bacon in Sugud Bay. The coal seams should easily and profitably be worked in that locality, as very little indication of extensive disturbance appears on the surface.

The only present coal production is from the mines on the Island of Batan, off the Albay coast. The Cebu properties remain in about the same condition they were in at the beginning of 1909.

THE UNITED STATES ARMY COAL MINE.—This mine is located on the west end of the island at Liguan (see map). Approximately 2½ kilometers of galleries, including entries, headings, crossholings, rooms, etc., have been opened up; these are confined to three principal seams, of which the uppermost at present furnishes the coal This seam, outcropping at an elevation of 60 meters above sea level, is 1 meter thick; it is dipping at an angle of 45° to the northwest.

The two longer ones are 40 feet apart and are, respectively, 1.54 meters and 1.33 meters in thickness. The measures at No. 4 entry on the upper seam, which is at present being used, are marked by a coarse grit or conglomerate full of quartz pebbles, both above and below the coal. This occurrence has not been noted in the coal measures on the eastern end of the island. His coal is quite firm and is superior in appearance to the Japanese coal sold in Manila. Recent steaming tests show it to be better for steaming.

As was predicted in 1905, a number of small faults and rolls have been encountered. From my recent examination of the mine I do not think that these are so serious as to make the operations unprofitable; but it is clear that the mining of coal on this end of the island will call for the most experienced engineering ability.

Since our last report 198 meters of new dockage and a 2,000-ton bin with double tracks connecting it with the dock have been built.

The output with hand labor varies from 60 to 80 tons a day. This, however, is not regular.

During the past year 6,000 tons were taken out and supplied to various vessels of the Army and Navy.

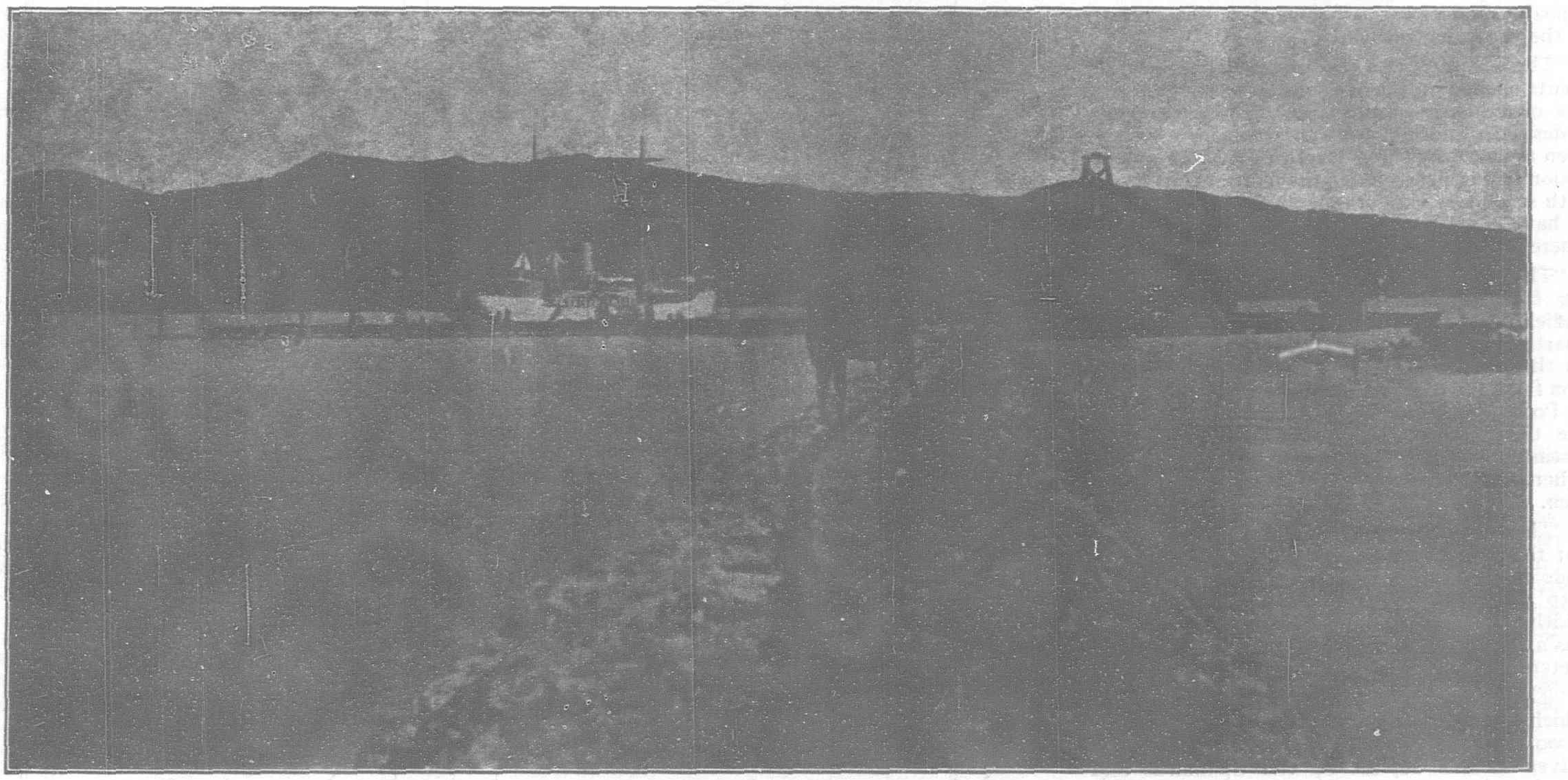
THE EAST BATAN COAL COMPANY.—A number of changes and improvements have been made at this mine.

The most important is the abandoning of the old and wasteful Japanese methods. With the arrival of Mr. Davy, a man experienced in underground work, the mine is being rapidly put into up-to-date condition. The old method of working to the dip and robbing the ribs has been abandoned. It has been found that after the first 30 centimeters of the roof scales off, the rest stands with only a row of props, so that henceforth an immense amount of timbering can be avoided. This roof has a tendency to arch itself, and it is quite likely than even props in the haulage-ways can be dispensed with.

Since our last report 883 meters of new track have been laid, connecting the mine with a new dock on which a very ingenious loading tower which travels on a track the whole length of the wharf has been erected. The tram cars have side doors, by means of which the coal is emptied into the loading bucket which is hoisted up to the required chute. There are four of the latter from which the coal slides into the ships' bunkers. The superintendent plans to change this system so that the tram car itself will be hoisted, thus obviating one handling of the coal. This loading tower is 14.5 meters high. The bucket holds 1 ton. The tram cars have a capacity of 2 tons. Other improvements are the digging of a new sump in the mine and the installation of an Emerson pump with a capacity of 757 liters a minute. A new 70-horsepower boiler is also being installed.

There are in all 6,096 meters of galleries, the main entry 295 meters at an angle of 15°, but 40° off the dip.

Although the production is not regular the average output is now 150 tons a day; when the present changes have been completed this will be increased to 200 or 250. It should be remembered that as yet no machines have been used. Mr. Daniels, manager, contemplates the installation of compressed air drills, mule



Courtesy Bureau of Science.

THE NEW DOCK, EAST BATAN COAL CO., BATAN

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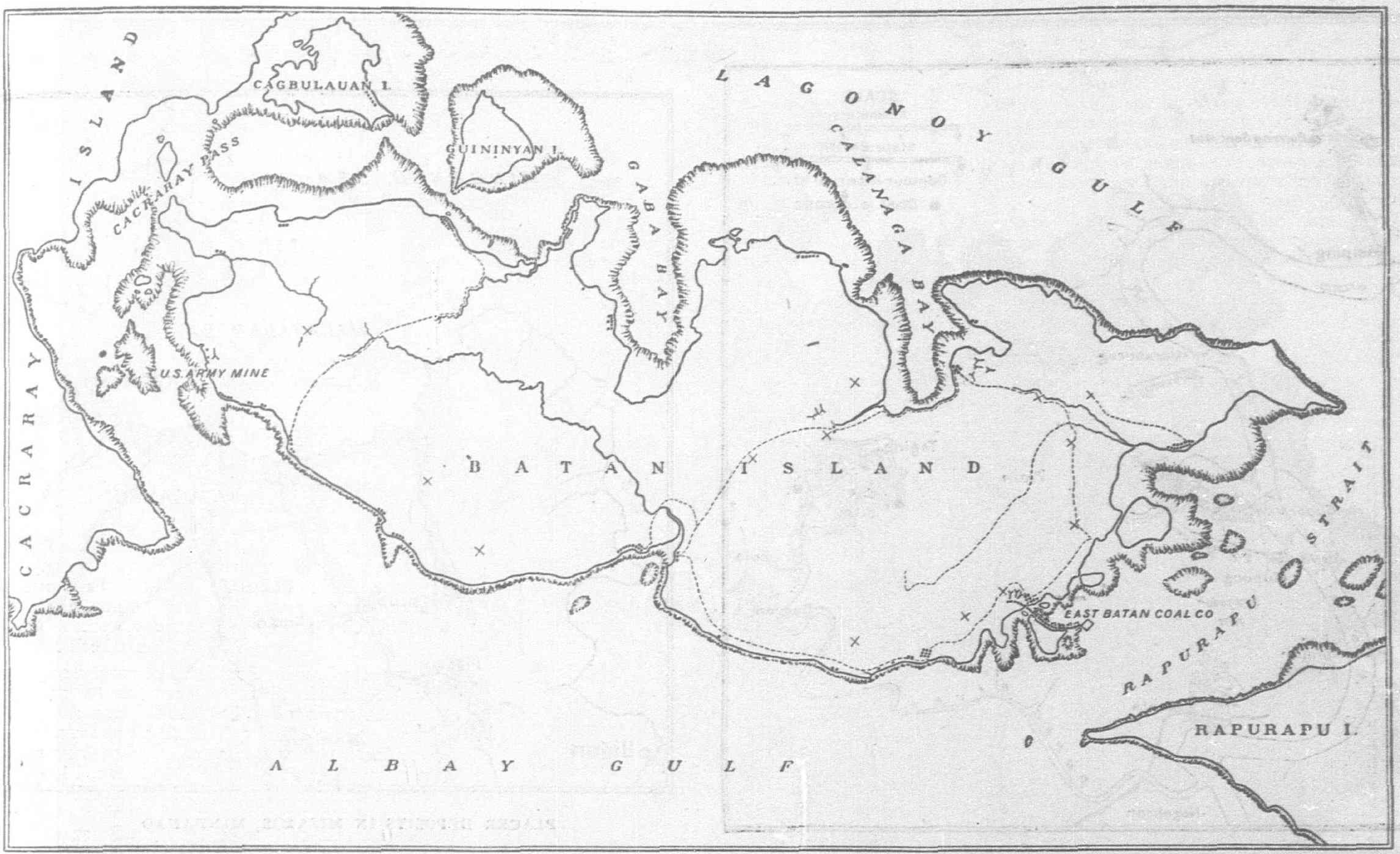
* By Warren D. Smith.

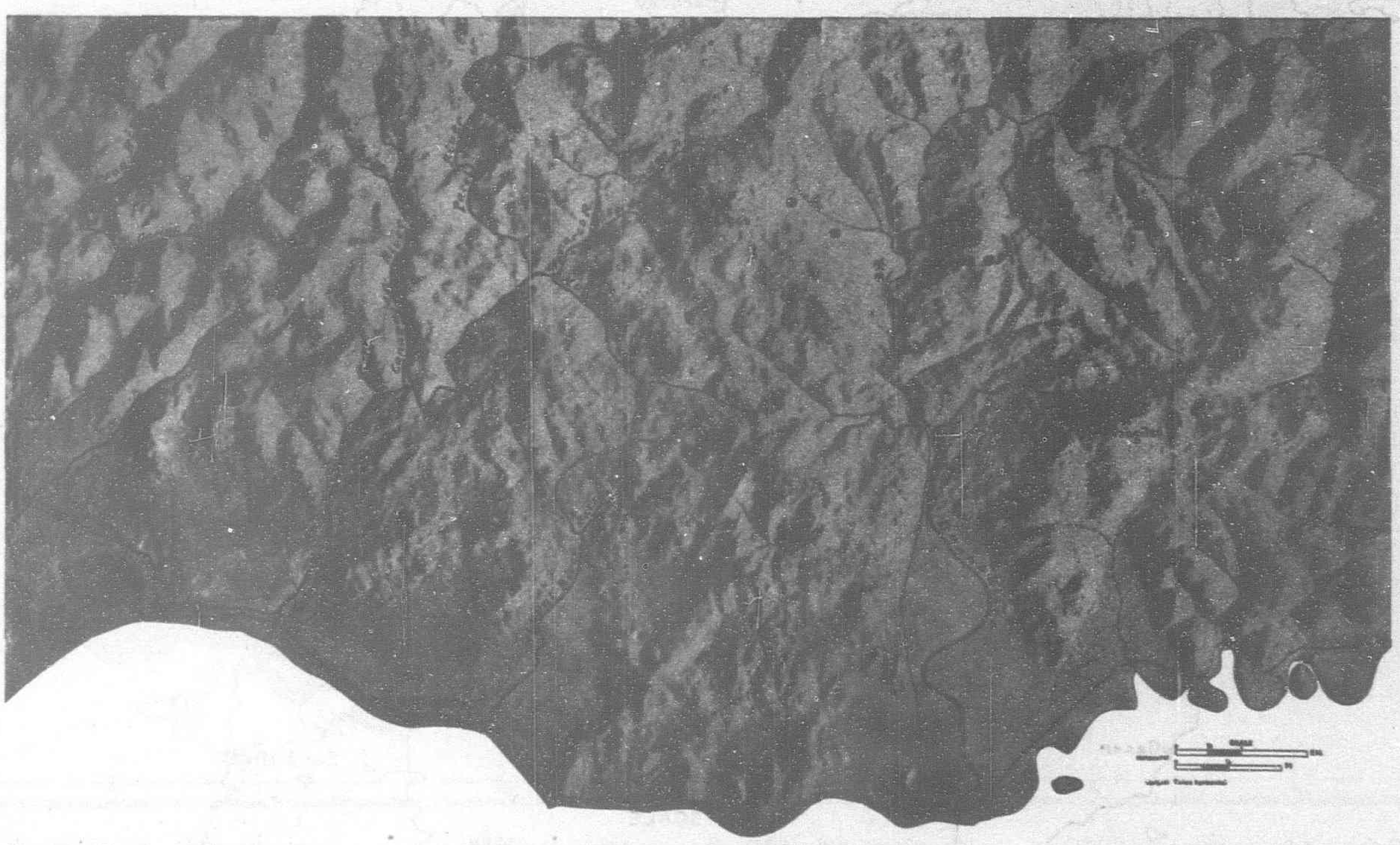


Courtesy Bureau of Science.

MAP OF BATAN ISLAND.

haulage, electric lights, and a number of other improvements within the year.

The coal pockets which the Civil Government proposes to erect here have not yet been constructed. They will be a very desirable addition to the plant.

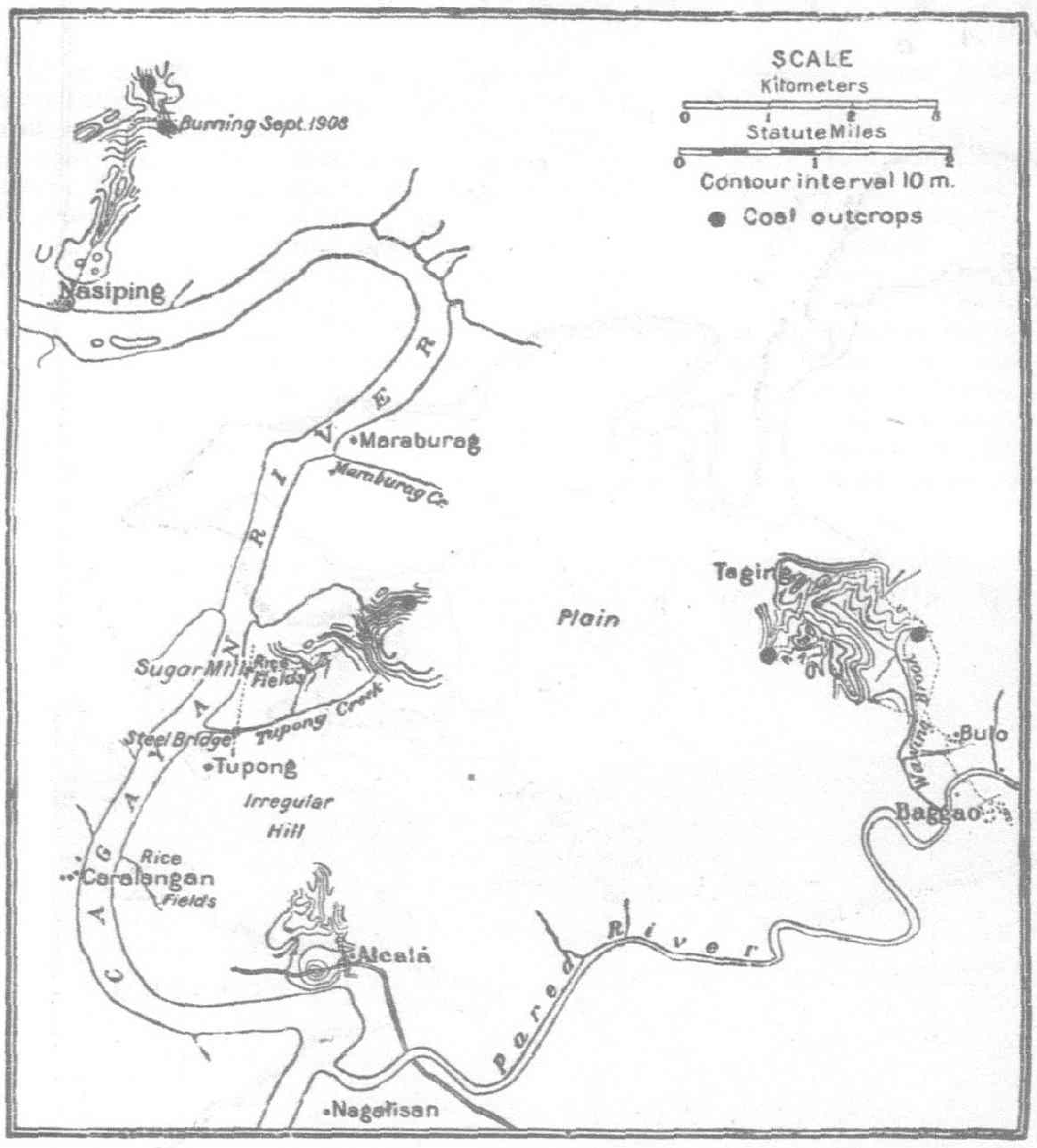


Courtesy Bureau of Science.

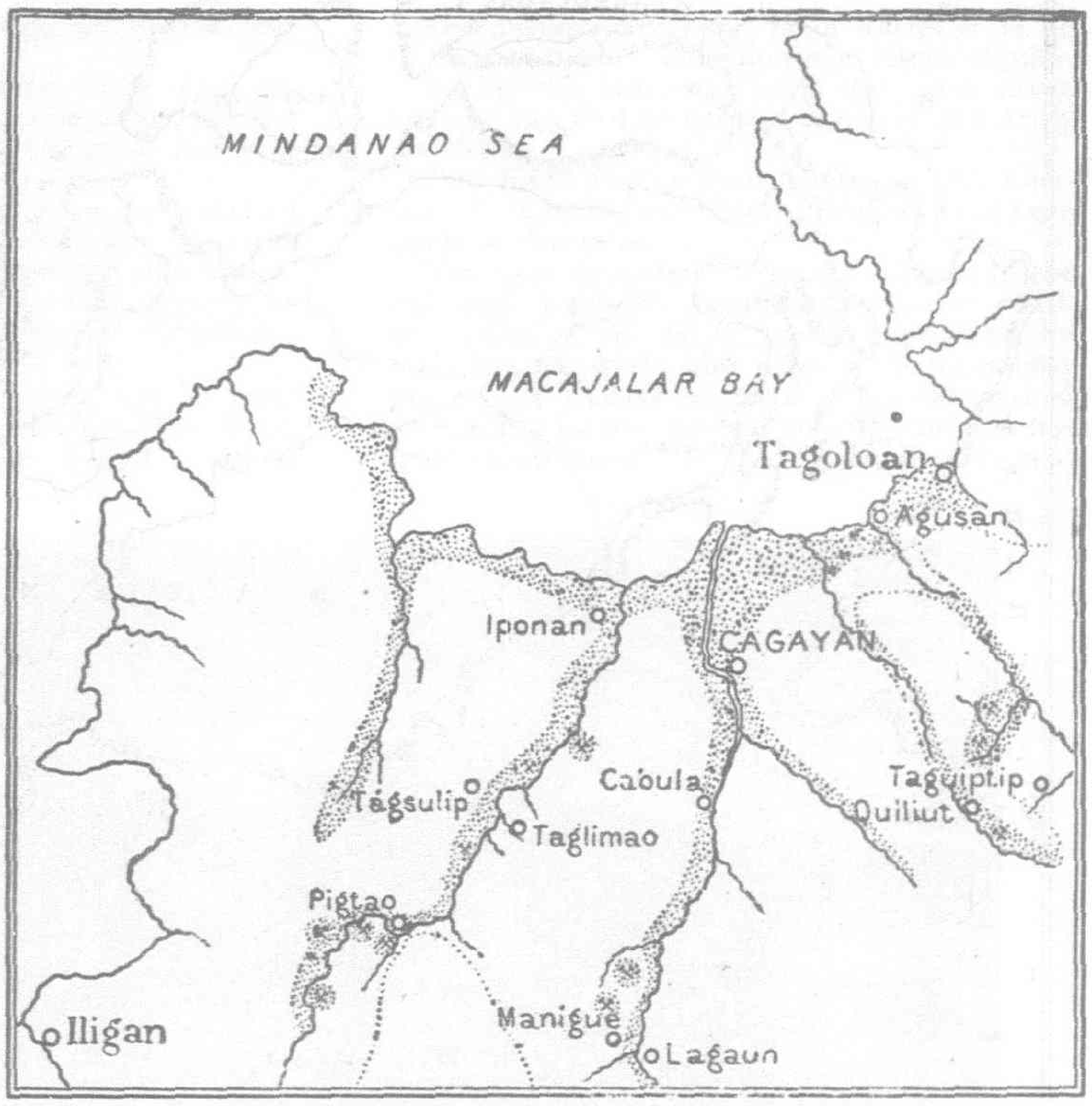
RELIEF MAP OF COMPOSTELA COAL FIELD, CEBU.

The conditions for economical mining on this end of the island are very favorable. The coal seam now being worked is 1.7 meters thick and is perfectly uniform, seemingly without a trace of faulting and only a slight tendency to roll. It has fine face and butt cleats, so that there is no need of powder, nor has any accumulation of gas been noticed. If more efficient labor could be had the conditions would be ideal for long-wall mining. The method employed now is the "room and pillar."

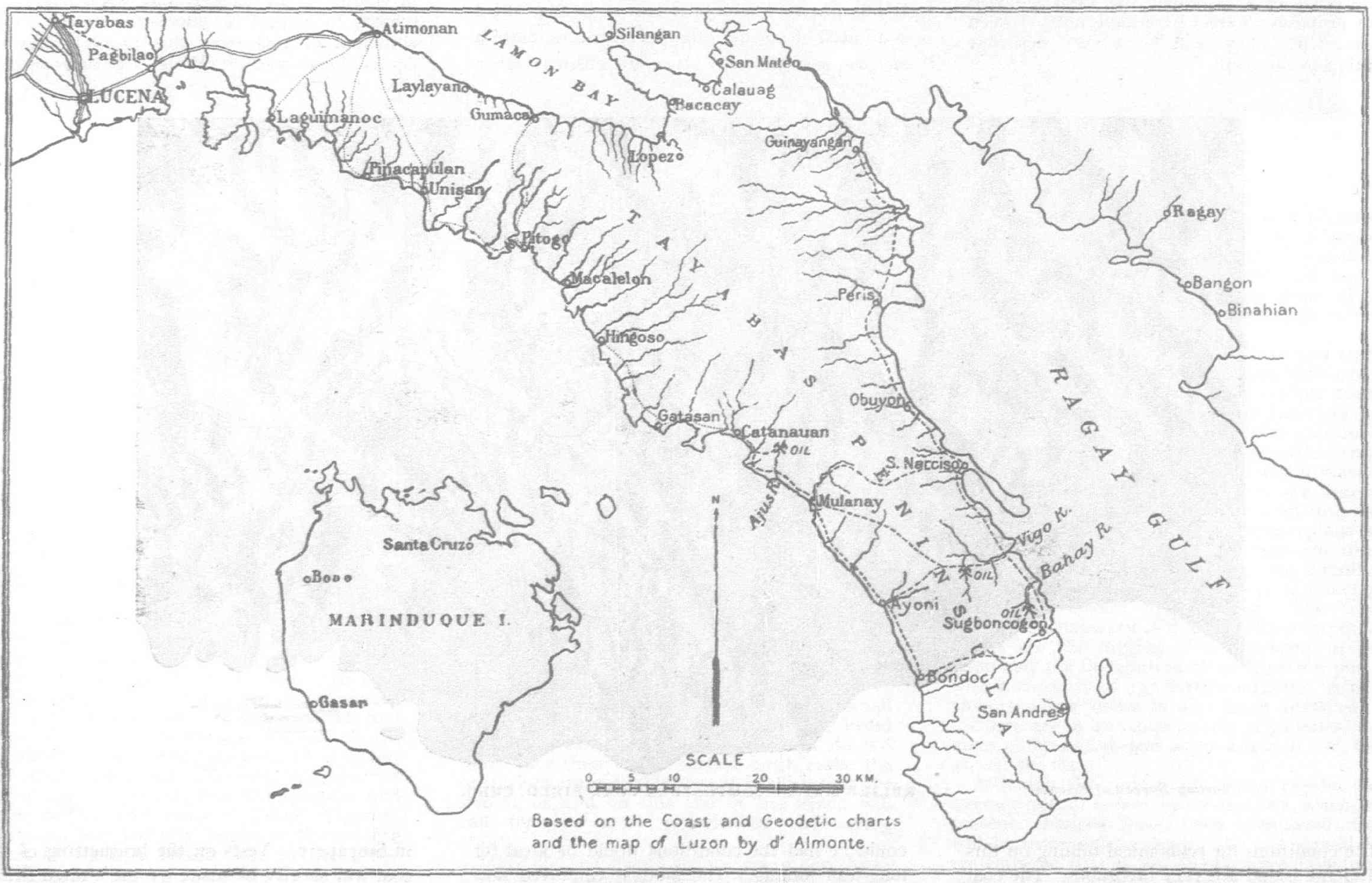
This company as it is now organized with Mr. Daniels as general manager and Mr. Davy in charge of the underground work has every reason to expect a successful future. One shipment of coal from this property has recently been sold in Hongkong and another in Singapore. Tests on the briquetting of this coal will shortly be made by the United States Geological Survey at its Pittsburg office.



COAL OUTCROPS IN CAGAYAN VALLEY



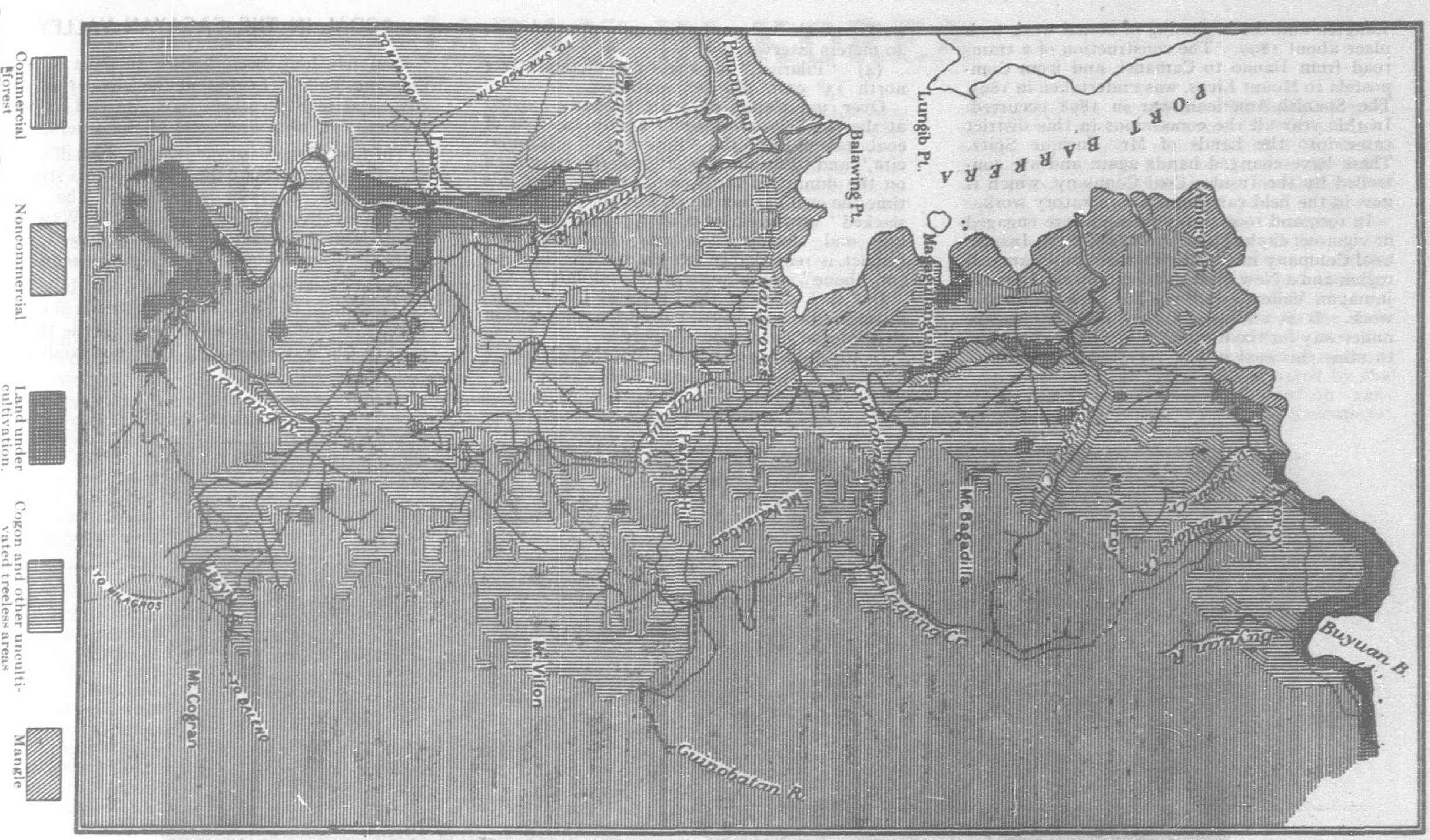
PLACER DEPOSITS IN MISAMIS, MINDANAO



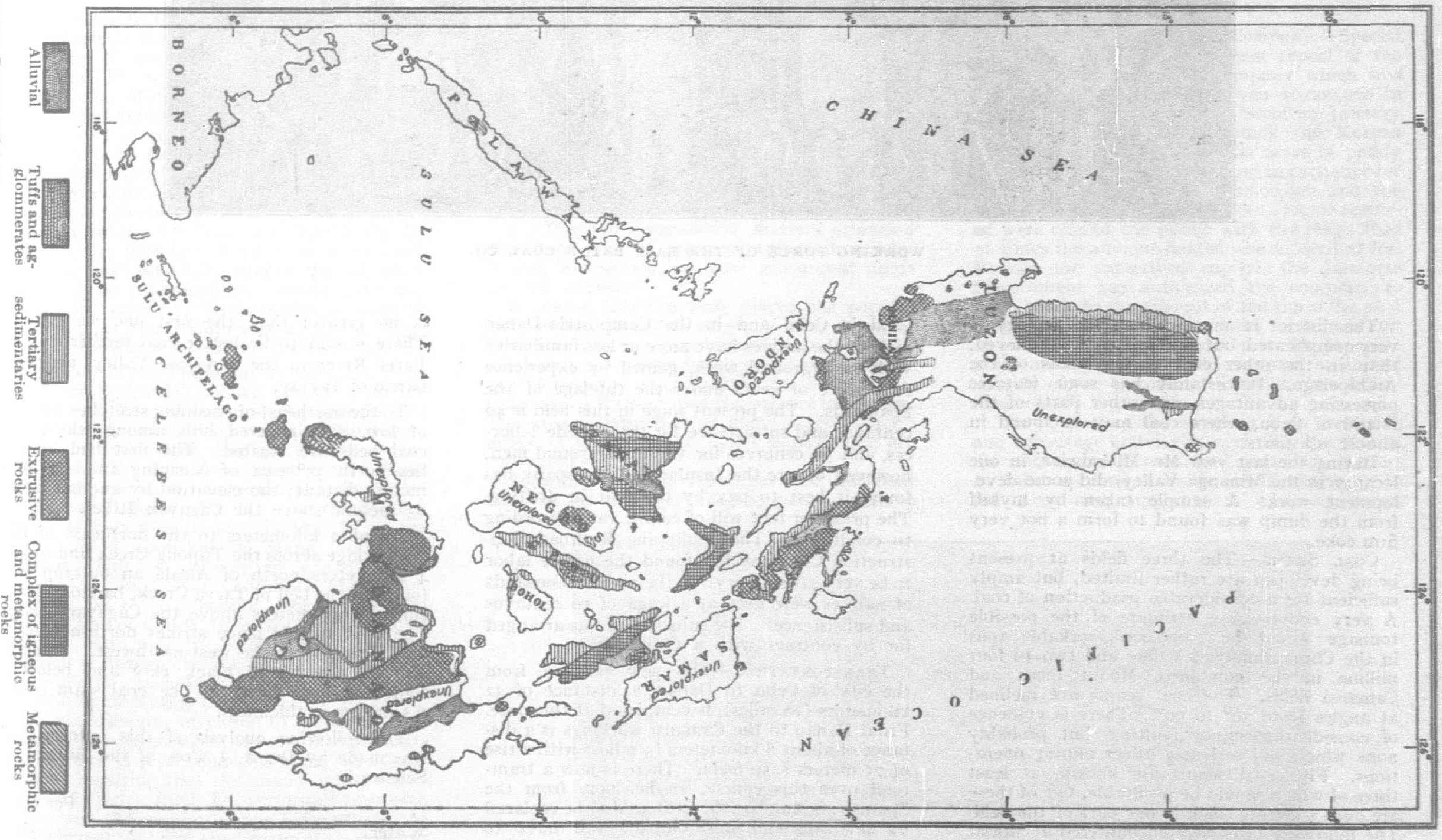
Based on the Coast and Geodetic charts and the map of Luzon by d' Almonte.

Courtesy Bureau of Science.

MAP OF TAYABAS PENINSULA



Courtesy Bureau of Science
FOREST MAP OF THE AROROY MINING DISTRICT, MASBATE



Courtesy Bureau of Science
GEOLOGICAL MAP OF THE PHILIPPINES

COAL IN CEBU.—The geology of the Island of Cebu was summarized by me in my paper on this region published in 1907.[1]

The complete history of the discovery of coal and operations in Cebu is given by Mr. Burritt in "The Coal Measures of the Philippines"[1] which is a compilation and translation from the Spanish records, a brief summary will therefore suffice for this bulletin.

Coal was discovered in Cebu in 1827. The first concessions in the Compostela-Danao region were solicited by Isaac Conui in 1871. A wagon road was built from Cot-cot cove to the workings at Dapdap in 1877. The formation of the association known as the Sociedad Nuevo

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[1] *Phil. Journ. Sci., Sec. A* (1907), 2, 377.

[1] Report to the United States Military Governor in the Philippines. Washington, 1901.

Langrea and the beginning of actual work took place about 1890. The construction of a tramroad from Danao to Camansi, and from Compostela to Mount Licos, was undertaken in 1895. The Spanish-American war in 1898 occurred. In this year all the concessions in this district came into the hands of Mr. Enrique Spitz. These have changed hands again and are controlled by the Insular Coal Company, which is now in the field carrying on exploratory work.

In 1907 and 1908 two companies were engaged in vigorous exploration of this field, the Insular Coal Company in the Mount Licos and Camansi region and a New York syndicate in the Cumayjumayan Valley, but there has been no further work. It is understood that negotiations are under way for the formation of a large company to mine this coal in the very near future.

WORKING FORCE OF THE EAST BATAN COAL CO.

The district is one in which the geology is very complicated, but not more so, it is believed, than in the other coal-bearing areas of the Archipelago. It certainly has some features possessing advantages over other parts of the Island of Cebu, where coal may be found in almost all parts.

During the last year Mr. Mitkaiwicz, in one locality in the Minanga Valley, did some development work. A sample taken by myself from the dump was found to form a not very firm coke.

COAL SEAMS.—The three fields at present being developed are rather limited, but amply sufficient for a considerable production of coal. A very conservative estimate of the possible tonnage would be 2,000,000 workable tons in the Cumayjumayan Valley and two to four million in the combined Mount Licos and Camansi fields. The coal seams are inclined at angles from 30° to 90°. There is evidence of considerable minor faulting, but probably none which will seriously affect mining operations. Five coal seams are known, at least three of which should be profitable, two of these are over 3 meters thick in one part of the field. The following beds were encountered at Mount Licos, from west to east, that is from lowest to highest:

(1) The "Carmen;" thickness 1.60 meters, strike northeast-southwest, dip 30° southeast; 40 meters interval.

(2) "Esperanza;" 50 centimeters, strike the same as above, dip the same; 9 meters interval.

(3) "Enrique Abella;" thickness 1.20 meters, strike north 23° east, dip 40° to southeast; 40 meters interval.

(4) "Pilarica;" thickness 1.40 meters, strike north 23° east, dip 30° southeast.

Over 300 meters of drifts formerly existed at the old Licos workings. About 100 tons of coal, taken from the "Esperanza," "Ramoncita," and "Enrique Abella" galleries have been on the dump for three or four years. In this time the coal has not taken fire, nor has it "airslacked" very greatly, good signs for its handling and storing. The coal throughout the district is remarkably free from dirt, "butter" and "bone" and is quite low in sulphur.

Dr. A. J. Cox, of the Chemical Laboratory, Bureau of Science, has discussed the composition of the coal in various papers.[1]

LABOR.—Labor conditions on the whole are good in Cebu and in the Compostela-Danao district the natives have more or less familiarity with underground work, gained by experience of a score of years under the tutelage of the Spaniards. The present wage in this field is 40 centavos and subsistence for the outside laborers, and 50 centavos for the underground men; however, of late the Insular Coal Company has found it best to pay by the foot in drifting. The price per foot will of course vary according to conditions. The Philippine Railroad Construction Company has found the native labor to be very satisfactory. In their work thousands of natives were used at a wage of 50 centavos and subsistence. The subsistence was arranged for by contract with a Chinaman.

TRANSPORTATION.—The new railroad from the city of Cebu to Danao, a distance of 32 kilometers (20 miles), is completed at this date. From Danao to the Camansi workings is a distance of about 8 kilometers (5 miles) with a rise of 75 meters (250 feet). There is now a tramroad over this course, an heirloom from the Spanish régime; but this will need to be replaced by new rails and more clearing will have to be done before any extensive work is undertaken. The transportation problem in the other parts of the district will not be so simple, and I believe overhead cables or inclined planes will be found to be necessary.

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[1] *Phil. Journ. Sci., Sec. A* (1906), 877; (1907), 2, 41; (1908), 3, 91, 301; (1909), 4, 171.

*COAL IN THE CAGAYAN VALLEY

Coal has long been known to exist in the Cagayan Valley (Luzon) in the vicinity of Alcala, and in September, 1908, we had an opportunity of visiting several of the outcrops.

The first of these is near Baggao, a small town about 10 kilometers up the Paret River, a stream joining the Cagayan at Alcala. The coal outcrops in a small brook called the Wawing, about three kilometers north of the town. Here the seam is about a meter in thickness.

About 2 kilometers west of this outcrop, coal occurs in the bed of a small stream flowing north. It was not possible to gauge the thickness of the seam here, but in all probability it is no greater than the first one we visited. There is said to be better coal farther up the Paret River in the San Jose Valley, near the barrio of Taytay.

To the northeast of Nasiping stretches a range of low, grass-covered hills among which the coal beds are located. The first bed visited lies north 35° east of Nasiping and 2.5 kilometers distant; the elevation by aneroid being 95 meters above the Cagayan River.

About 2 kilometers to the northeast of the steel bridge across the Tupong Creek and about 4 kilometers north of Alcalá an outcrop was found in the bed of Tarya Creek, barrio of Maasin, and 45 meters above the Cagayan River. The coal at this place strikes north-northeast and dips 30° to the west-northwest. Directly above is a layer of black clay and below a lighter colored variety. The coal seam is but 0.5 meters in thickness.

The following analysis of this outcrop coal was made by Dr. A. J. Cox, of the Bureau of Science:

	Per cent.
Water	19.3
Volatile combustible matter	38.8
Fixed carbon	30.3
Ash	11.6
Total	100.0

---

*By Warren D. Smith, Ph. D., Geologist and Chief of Division.

JAPAN IN KOREA

The annexation of Korea by Japan, made effective August 29, is the outcome of the policy initiated with the military occupation of Korea at the outbreak of the Russo-Japanese war and confirmed by the Treaty of Portsmouth which gave Japan predominance in Korean affairs. A Resident General was appointed in an advisory capacity and a reform of the administration was begun in 1905. Greater powers were extended to the Resident General by agreement in 1907 and he inaugurated a policy of reform followed by a program designed to develop natural resources by encouraging industry and opening up roads and railways throughout the country.

Hampered by incapable Korean officials a reorganization of the various departments was necessary. Capable Japanese officials were appointed to direct affairs where Koreans failed to carry out the proposed reforms. As a result of this weeding out the Resident General's report for 1909 shows that 2,090 Japanese officials were appointed 466 to important positions and 1,624 to subordinate offices, while 3,030 Koreans were retained, 801 to the more important and 2,229 subordinate. It has been the policy of Tokyo to give the progressive Koreans the greatest possible participation in Korean affairs and to direct the energies of the administration to encouraging material development.

The new reform measures, sanctioned by the Korean Emperor in November, 1907, and which were carried out under the direction of the Resident General, are as follows:

"1. That the sovereign and his subjects should co-operate in pursuance of a national policy leading to reform and progress.

2. That encouragement should be given to agriculture, commerce and industry in order to promote the country's welfare.

NEW CABINET BUILDING AT SEOUL, NOW OCCUPIED BY FINANCE DEPARTMENT. REPRODUCED FROM THE RESIDENT GENERAL'S REPORT

3. That order should be strictly maintained and long-standing defects eradicated, with a view to the successful realization of the great work of regeneration.

4. That the welfare of the people should be promoted by improving the internal administration, and that justice should be meted out to all by establishing a new judicial system.

5. That talented persons should be carefully sought out and appointed to suitable posts.

6. That in educational matters, attention should be paid to practical, rather than theoretical, instruction, to meet the urgent needs of the country."

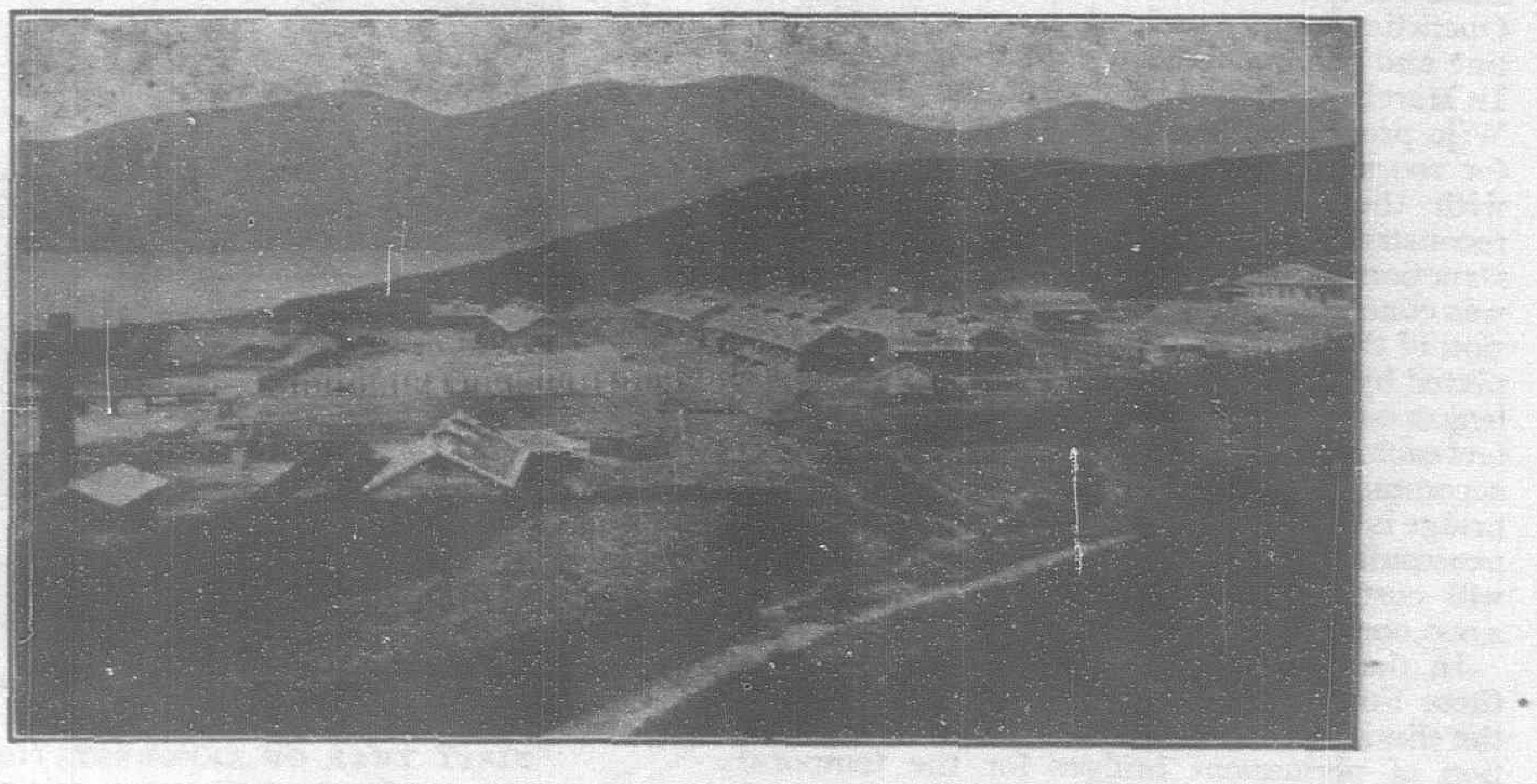
A census, taken in 1906, placed the population at approximately 9,750,000 and, in 1908, there was a foreign population of about 140,000, of which 127,000 were Japanese; 12,332, Chinese; 464, American; 153, British; 87, French; 33, German; 14 Russian; and the balance scattering. The area is estimated at about 90,000 square miles of which about 9,000 square miles are cultivated.

According to the report of the Resident General for the year 1908-09 yen 32,594,119 represented the expenditure for the year paid out of the Imperial Treasury for the administration of the office which included the maintenance of thirteen local residencies, the Railway Bureau, Patents Bureau, Communications Bureau, the Appeal Court of Japan in Korea, and the Forestry Undertakings Bureau. For the years 1906, 1907 and 1908 in all the sum of yen 61,501,861 and for the next five years the sum of yen 19,682,623 will be provided by Tokyo annually to maintain Korean finances. The only income received is that from the Railway and Communications, but they were far from covering expenses up to the end of 1908-09.

In all, during the three years covered by the report, yen 31,876,604 were expended on railways and yen 6,746,437 on communications.

The Oriental Development Company.—Special reference is made in the recent report of the Resident General to this company which was organized with a capital of yen 10,000,000 in 1908 and opened its office in Seoul on January 28, 1909. Of the capital stock the Korean Government subscribed 14,000 acres of paddy fields and 14,000 acres of upland in exchange for stock to the value of yen 3,000,000 and the balance with the exception of yen 470,000 reserved were offered the public with the result that 36 times the amount floated was subscribed for. Besides the subscribed capital, the Japanese Government has authorized the company to issue bonds to the amount of ten times the paid up capital and guarantees them to the amount of yen 20,000,000 Besides this the Japanese government has granted the company an annual subsidy of yen 300,000 until such a time a dividend of 8% is earned.

The purpose of the company is to engage in and encourage activity in agriculture in Korea. To encourage Korean and Japanese settlers to take up land, furnish funds necessary to aid them and supply them with equipment



EXPORTING CATTLE. QUARANTINE STATION IN FUSAN

If we consider the poor quality of the coal and the thickness of the seams, together with the distance from Manila as well as the scarcity of labor, it will be seen that this coal probably will never become available for the Manila market. However, there is no reason why the river steamboats could not save a large part of their coal bills by using it mixed with Australian, and it might be possible, if developments should show improvement in quality and continuity of seams, that steamers calling at Aparri would find it profitable to take part of their coal at that port instead of at Manila.

OTHER INTERESTING PAPERS

In addition to the previous articles contained in the Bulletin is an extensive resumé of "Miscellaneous Nonmetallic Products" by George I. Adams, D. Sc., Geologist, and Wallace E Platt, A. M., Mining Engineer of the Division, with special reference to the prospect for the manufacture of cement in view of the annual importation to the value of over ₱1,500,000 and to the activity of the Bahay Oil Company in its prospecting work in Tayabas. This paper is supplemented by additional notes on the same subject by Warren D. Smith, Ph. D., covering the presence of asbestos, glass sand, graphite, mica and talc, mineral waters, abrasives, tripoli, navaculites, ochers, gypsum, pyrites and sulphur. There is also a paper on Cyaniding in the Philippines by C. M. Eye, E. M., superintendent of the Colorado Co.

"Geology of the Philippine Islands" by Warren D. Smith, Ph. D., and an excerpt from the "Report of the Auriferous Deposits of the Second District of the Department of Mindanao, Misamis," by Enrique Abella y Casariego, former chief of the Cuerpo de Ingenieros de Minas under the Spanish Government, translated by Warren D. Smith, Ph. D., from the Spanish report as published in 1877 in Vol. VI of the Boletin de la Comision del Mapa, is included together with an interesting excerpt from the Report on Forest Conditions of Aroroy, Masbate, by H. N. Whitford, forester, chief of the Division of Forest Investigation, Bureau of Forestry, with map by Fred L. Pray, forester, Division of Administration, Bureau of Forestry, the Bulletin concluding with an Abstract of the Philippine Mining Law by H. G. Ferguson, A. M., and directing attention to the severe provision of certain sections, one of which prohibits the location of more than one claim on a lode, another requiring that the annual labor to the value of ₱200 shall be performed on each claim, and the section having reference to the development of coal measures that requires the payment of from ₱.50 to ₱100 a hectare within one year after filing of claims and that filing must be done within 60 days, after the date of location. Recommendations have been made to Congress for remedial legislation to overcome these hardships and favorable action is expected.

taking produce in return. Money advanced to original settlers is required paid in 25 annual instalments. This company has now been operating for some time and indications point to success.

Road Construction.—In 1907 the Japanese Government made a loan to the Korean government of yen 19,682,623, redeemable in six years and known as the First Public Undertakings Loan which was made available to assist in the increased expenses of reorganization. Of this amount yen 1,500,000 was made available at once for road construction and a program including the construction of four roads covering a distance in all of 162.5 miles. Of this 37.5 miles were completed in 1907; 66.5 in 1908 and the balance in 1909.

TIMBER RAFTS IN THE YALU RIVER
Reproduced from Resident General's Report

In 1908 a fund of yen 702,987 was made available for the construction of seven additional thoroughfares covering in all a distance of 118.5 miles. All these roads have been surveyed and at the end of the year 1909, 10 miles were open for traffic and the balance were expected constructed by the end of the present fiscal year.

All this work is of a substantial character and the roads are designed to cover the main traffic and to serve as models for the feeders undertaken by local administrations. Besides the provincial activity, yen 87,100 were spent in city improvements in Seoul in repairing and improving streets and bridges.

Korean Railways.—The average daily mileage of railway, according to the report for June, 1910, was 641 miles which represents unusual activity in the construction of railway lines since 1906 under the direction of the Japanese. Operations are confined to the Seoul-Fusan line and the Seoul-Wiju with their connections. In March, 1909, the reconstruction of the Seoul-Wiju progressed to a point where regular service for 200 miles north was inaugurated to connect with the Seoul-Fusan. Since that time the reconstruction has been completed. The reconstruction for the Masan line 25 miles in length was concluded in March, 1908. The construction of the Yalu River bridge is expected completed by the end of 1911. It is 3,100 feet in length consisting of twelve spans of 200 and 300 feet each, one of the latter being in the middle to accommodate shipping on the Yalu. This bridge is the connecting link between the Korean peninsular line and the Antung-Mukden. It will cost, when completed, approximately yen 2,000,000.

In the work of reconstruction and repair of these lines, including the reduction of grades, the elimination of sharp curves and the substitution of permanent bridges for the temporary wooden structures, approximately yen 95,000,000 were spent up to the end of the year 1909. It will be remembered that these lines were hastily built for temporary military purposes by the Japanese during the war and necessarily were very crooked and poorly constructed. Seventy-five pound rails have replaced the 60 pound, the maximum grade reduced from one in thirty to one in one hundred and the minimum curve to 20 chains radius from 10 chains radius.

The accompanying map from the Resident General's report on railway postal routes indicates the principal lines. Seoul is the center and from that point the Seoul-Fusan, 300 miles in length, crosses the peninsula in a South-Western direction and connects with the channel ferry steamers connecting Fusan and Shimonoseki and Japanese lines to Tokyo. With the extension of the Fusan-Seoul 309 miles northward by way of Anju to Wiju on the Yalu river constitute the main line of the peninsular. The branch lines include one connecting Seoul and Chemulpo; the Masampo branch connecting that point with the Seoul-Fusan near Fusan and the Pying-yang branch of the Seoul-Wiju connecting Pying-yang with the port of Chinnampo.

Unusual activity has characterized the work of railway construction in Korea under Japanese direction and there is no doubt that the present transportation facilities would have been greatly delayed and very probably never inaugurated had it not been for Japanese intitiative.

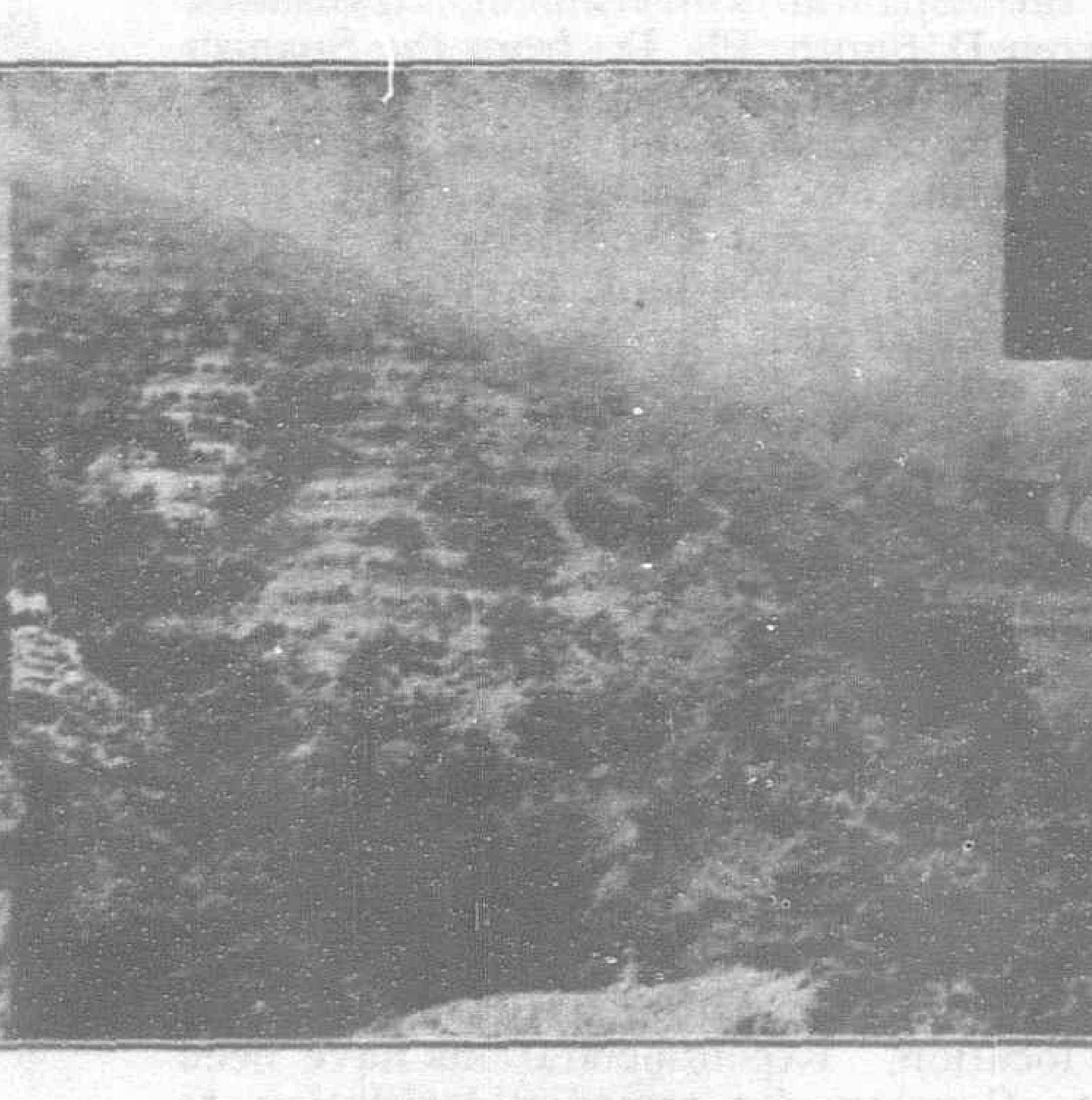
Telegraph and Telephones.—The extension of the long distance telephone and the telegraph system has been one of the features of progress in intercommunication under Japanese control. At the end of 1909 there were 200 public telegraph offices open in Korea against 86 in 1906 and the length of wiring increased from 5,895 to approximately 7,100 miles, while the public telephone offices were increased from 13 to 64 during the same period and the wiring from 832 to 5,500 miles.

Harbor Improvements.—The total appropriations for harbor works since 1906 amount to approximately yen 5,000,000 and included the development of thirteen harbors in Korea. Fusan, Chemulpo, Chinnampo, Wonsan, Chyongjin, Kunsan and Seoul are the most important.

An appropriation of yen 1,441,000 was made for Fusan alone and of this work 60% was completed in 1909. Chemulpo was allowed 946,287 of which 40% was spent at the end of the last fiscal year. Wonsan, yen 491,142, is nearing completion and the balance of this work in a general way progressed most favorably. When the general harbor works improvement scheme is carried out Korea will not lack modern ports to encourage her foreign trade.

Irrigation.—The Japanese authorities have endeavored to encourage the development of agriculture, forestry and sericulture and for this purpose have established model farms and schools. It was found, however, that unless comprehensive systems of irrigation were introduced large areas

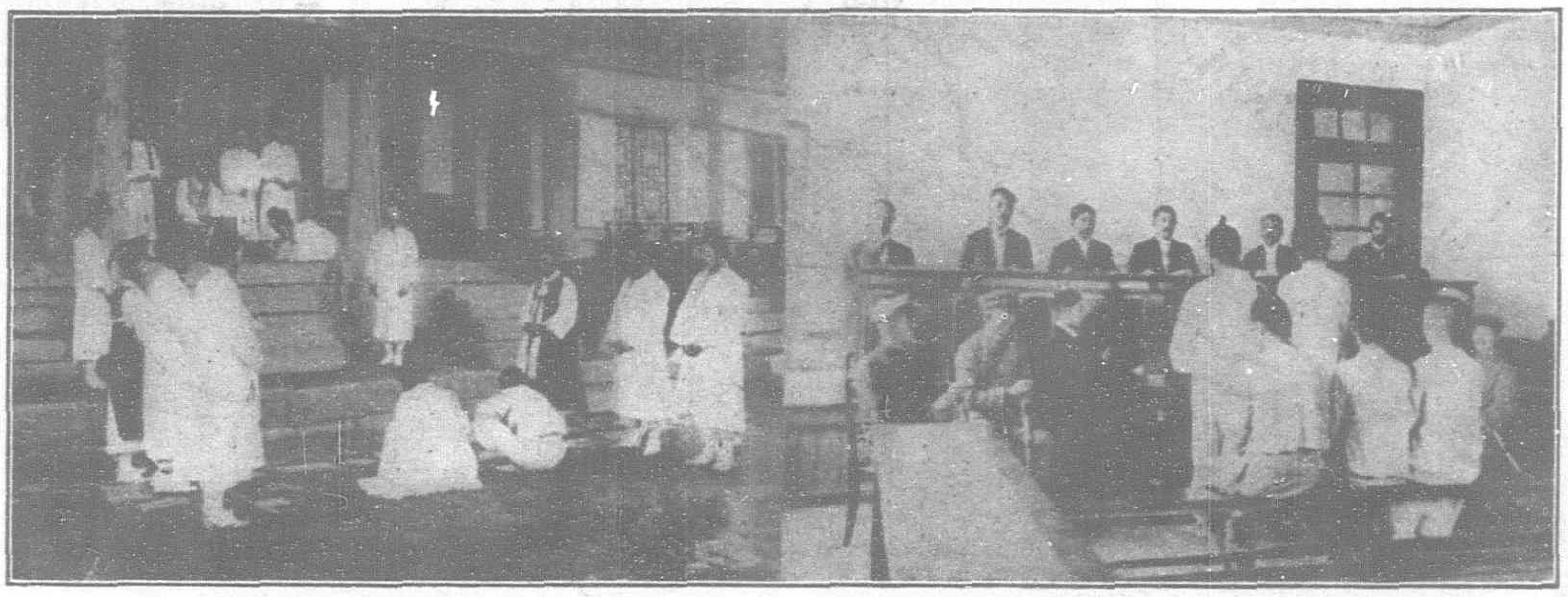
FIRST YEAR OF AFFORESTATION IN
MODEL FOREST NEAR SEOUL



RESULT SHOWN IN THE SECOND YEAR
ON SAME FOREST

POST OFFICE AND POSTAL ROUTE
IN KOREA
31ST MARCH, 1909
MANCHURIA.
CHIENTAO
NORTH-HAM-GYONG
SOUTH-HAM-GYONG
NORTH-PHYONG-AN
SOUTH-PHYONG-AN
HOANG-HAI
KANG-UON
KYONG-GEUI
NORTH-CHUNG-CHYONG
SOUTH-CHUNG-CHYONG
NORTH-KYONGSYANG
SOUTH-KYONGSYANG
NORTH-CHOLLA
SOUTH-CHOLLA
SOUTH-CHOLLADO
Chehju Isl.
SHIN-WIJU
WIJU
PYING-YANG
WONSAN
CHONG-JIN
SEOUL
CHEMULPO
KUNSAN
MOKPO
FUSAN
CHEHJU
TO JAPAN
TO CHINA
BUREAU OF COMMUNICATIONS OF THE RESIDENCY GENERAL.
1ST. CLASS POST OFFICE.
2ND. CLASS POST OFFICE.
3RD. CLASS POST OFFICE.
3RD. CLASS POST OFFICE IN FISHING VESSEL.
POST STATION.
LOCOMOTIVE RAILWAY POSTAL ROUTE.
POSTAL ROUTE (BY ROAD).
MARITIME POSTAL ROUTE.
TRUCK RAILWAY POSTAL ROUTE.
POSTAL DISTRICT BELONGING TO 1ST. CLASS POST OFFICE.
NUMBER OF POST OFFICES.
1ST. CLASS POST OFFICE
2ND CLASS POST OFFICE
3RD CLASS POST OFFICE
POST STATION
LENGTH OF ROUTES.
RAILWAY POSTAL ROUTE
TRUCK RAILWAY POSTAL ROUTE
MARITIME POSTAL ROUTE
POSTAL ROUTE (BY ROAD)
124°
125°
126°
127°
128°
129°
130°
131°

could not be made productive. An investigation into the status of irrigation revealed the fact that there were 1,231 irrigation reservoirs or ponds scattered throughout the peninsula that had been in existence for centuries, but as in other departments of industry they were neglected by the Koreans and few, if any, served their original purpose. One reservoir situated on the Government Model Farm at Luwon, was built in the reign of Emperor Chong-Chong over 115 years ago. This pond is well preserved for the reason that the Imperial Household has always been interested in this farm. Plans have been under consideration for the reconstruction and repair of these reservoirs as the initial step to a more comprehensive scheme to redeem waste lands and instal irrigation systems by utilizing the natural waterways of the country.



OLD COURT TRIAL, KOREA NEW COURT PROCEEDINGS

Reproduced from the Resident General's Report

Cotton Planting.—The cultivation of American upland cotton is being encouraged. The latest statistics available show that in 1908, 492 acres were under cultivation as compared with 150 acres in 1906, and 102,765 pounds were produced in 1907. The Korean government subsidized an "Association for the Cultivation of Cotton" to the extent of yen 100,000 in 1906 and its plantation was placed under the control of the Government model farm at Mok-po. In 1908 a temporary cotton planting station was established by Imperial Ordinance and the new station undertook the business of the association. Great interest has been taken in this industry in different sections of the country and there is promise of greater extension in the near future.

Mining.—The principal mines operating are those at Wunsun controlled by the Oriental Consolidated Mining Co. The concession was granted James R. Morse in 1896 and modified in 1899. The output of gold for the year ended February 12, 1909, amounted in value to $1,716,104 gold according to the Resident General's report and there were employed 75 Americans and Europeans, 60 Japanese, 2,300 Koreans, and 600 Chinese. The company was organized under the laws of West Virginia with a capital of yen 10,000,000.

The other mines include the English concession of Suan in HuWang province operated by the Korean Syndicate; the Chik-an mine, Japanese concession, owned by the Asano Syndicate in Chang-Chong province; the Chang-Yang mine, a French concession in North Pyong-an, and an Italian concession in Hu-Chang, same province. All these concessions produce gold and associate minerals. With the promulgation of the new and more liberal mining laws in 1906 there was greater interest shown in this department of industry and many applications were received. Up to the end of 1908 figures available show 361 new concessions granted, 285 to Japanese, 47 to Koreans and 29 to other nationalities.

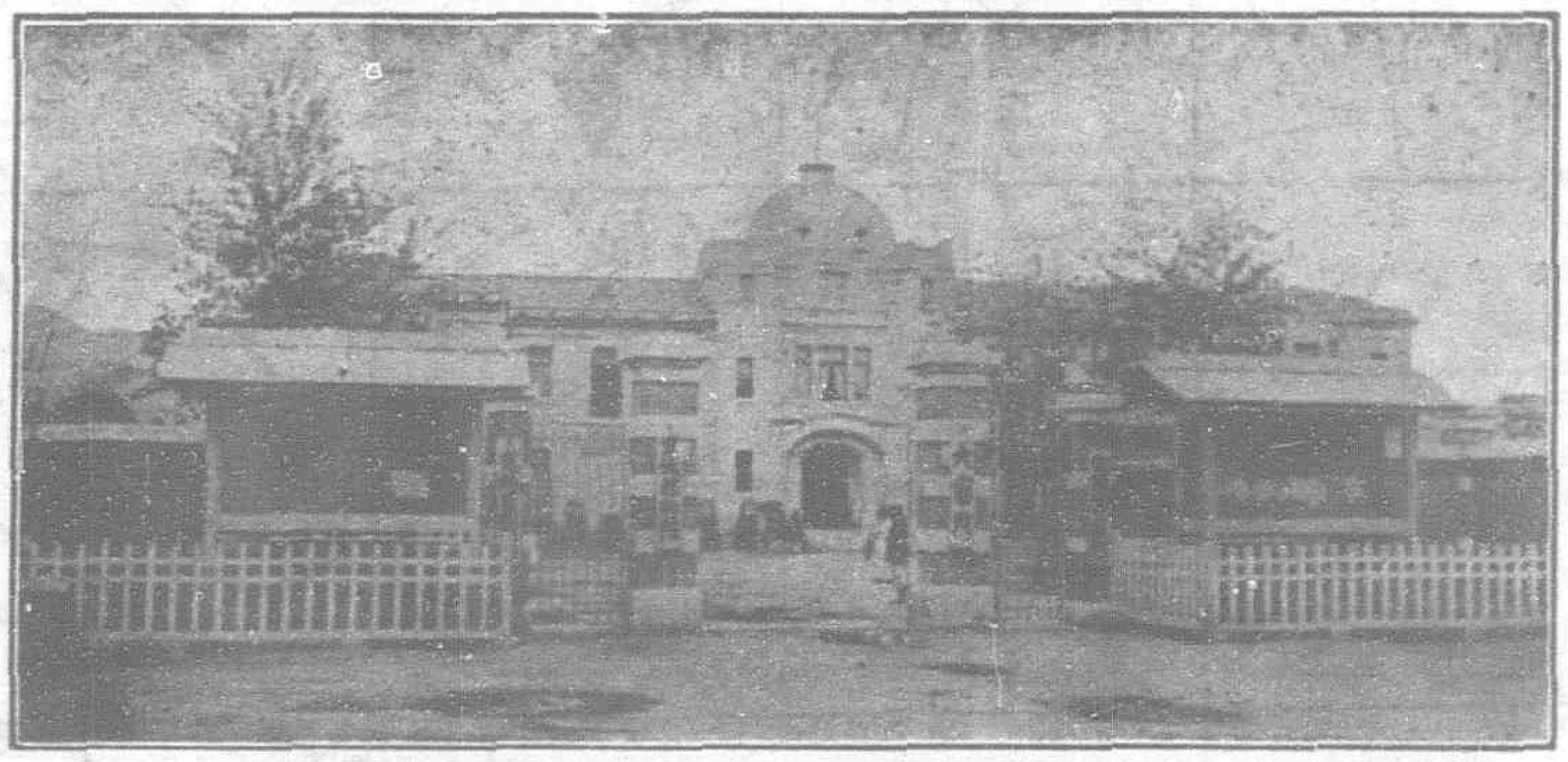
The Kapsan copper mining concession, granted Messrs. Collbran Bostwick Co. in 1904, was the subject of diplomatic adjustment owing to certain indefinite clauses in the original grant that caused the Resident General to withhold his confirmation. However, in 1908, an adjustment was reached and a new concession granted covering the old grant the area to be selected in the Kap-San District before 1913.

The Pying-Yang coal mine operated by the Pying-yang Coal Mining Station of the Korean Government began extending its operations in 1907 to meet the demand for coal by the Tokuyama Coal Brick Manufacturing Station maintained by the Japanese Navy. The output increased from 2,150 tons in 1907 to 53,493 tons in 1909. The extensions and improvements included a railway seven miles long to connect with the railway station at Pying-Yang.

The iron mines in Hwanghai province near Chinnampo were controlled by the Imperial Household of Korea until transferred in 1907 to the Department of Agriculture, Commerce and Industry and operated by Japanese under a royalty. The annual output is represented by approximately 50,000 tons which are shipped to the Japanese Government Foundry.

Sanitation.—Perhaps in no department of activity in Korea has the benefit of Japanese initiative been more apparent than in the battle along sanitary lines against dirt and disease. A Sanitary Bureau, with ramifications extending throughout the country, was established in 1908 and a continual war against epidemic diseases has been waged with more or less success. Evidence of the control of cholera and smallpox is found in a comparison of the mortality in 1908 compared with 1907, and in 1909, according to the Resident General's report, the outbreak was confined to Seoul by most vigorous measures. As in other backward peoples the success in stamping out disease in Korea corresponds to the measure of sympathy and co-operation given the health authorities by the people. Prejudice is dying hard in Korea where superstition is well grounded. This is particularly

(Continued to page 133)



NEW COURT HOUSE AT SEOUL

SHIPPING COTTON FROM THE PORT OF MOKPO, KOREA

THE FAR EASTERN REVIEW

GEO. BRONSON REA, M. E.
PUBLISHER
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MANILA, SHANGHAI, AND YOKOHAMA, SEPTEMBER, 1910

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THE ANNEXATION OF KOREA

"To promote the common weal of the two nations and to assure permanent peace in the Extreme East" is the declared motive for the conclusion of the treaty of annexation between the Emperor of Japan and the Emperor of Korea. This is supplemented by an introduction to the official announcement of rules governing Korea's foreign trade and treaty obligations as affected by the transfer of sovereignty, which offers further explanation and follows:

"Notwithstanding the earnest and laborious work of reform in the administration of Korea in which the Governments of Japan and Korea have been engaged for more than four years since the conclusion of the agreement of 1905 the existing system of government in that country has not proved entirely equal to the duty of preserving public order and tranquillity and in addition a spirit of suspicion and misgiving dominates the whole Peninsula In order to maintain peace and stability in Korea, to promote the prosperity and welfare of the Koreans and at the same time to insure the safety and repose of foreign residents it has been made abundantly clear that fundamental changes in the actual regime of government are absolutely essential."

The treaty was concluded August 22 and promulgated August 29.

In another column, we publish a short review of the development that has featured Japanese administrative control initiated by the agreement of 1905, and while there is every indication of a progressive policy on the part of the Japanese with respect to the development of the country's lagging industries, the lack of co-operation on the part of the people and the limited control of the different functions of government were too serious handicaps to make the program of reform effective. With the transfer of sovereignty these limitations are removed and we have no hesitancy in predicting a remarkable era of development under the new regime. The preservation of peace and the insurance of protection to private property were not possible under the former regime without conflict of authority. These are necessary requirements as a basis of any healthy progress along the line of reform and Japan had either to withdraw her influence from Korea and abandon her policy there or annex the country. The Koreans failed to take advantage of the opportunity to co-operate and participate in the program of reform which was their only hope for the preservation of the Korean empire. Their fate is that of "cumberers of the earth."

Little, if any, opposition has been noted in the press to the transfer of sovereignty. It is generally realized that Korea, in its decadent state, was a menace to Japan. It offered temptation for international intrigue. It is now an added safeguard to the integrity of the Japanese Empire.

Japanese writers, in discussing the transfer of sovereignty, direct attention to the similarity of motives that urged the annexation of Hawaii by the United States, when it became apparent to the latter that unless the islands became United States territory, they might form a bone of serious contention and a menace to the western coast if occupied by a foreign power. These writers also refer to America's altruistic policy in the Philippines and point to the great similarity in methods of reform and development of industries among a backward people, inaugurated in the islands and those in Korea. They claim that Japan's control of Korea will give it the same authority there to carry out its policy as that enjoyed by America in its island possessions, and, while it is the present pronounced policy of the administration at Washington to give the islands independence at some indefinite date, it is the generally accepted belief that the advantages of American sovereignty over the islands will become in time so apparent to the Filipinos that they will refuse to countenance agitation favoring withdrawal. The Japanese, however, are anticipating the future appreciation by Koreans of the benefits of annexation and the definite announcement of the status of Korea as an integral part of the empire makes for greater confidence in the future of that country, a consummation not provided with reference to the Philippines by the indefinite status involved in Washington's policy.

In a word, Japan refused to undertake definite responsibility for the tuition of the Koreans without the authority necessary to enforce the Imperial will in matters of discipline, and to control international relations in a manner to avoid embarrassing situations. And Japanese statesmen presume the conditions that made it necessary to acquire sovereignty would be resumed should hope for independence be held out to that country in the future. The treaty of annexation therefore, very wisely, contains no such sophistry.

THE CHINCHOW-AIGUN RAILWAY

Interest in the proposed construction of this line has received an impetus by the action of the China Association in filing a protest with the British Foreign Office against the sacrifice of the interests of British contractors by the continued attitude of the British government towards the construction of this line in deference to the wishes of Russia and Japan as affecting Mongolia and Manchuria.

The Association claims that this line is purely a Chinese undertaking and does not conflict with the Anglo-Russian Agreement. A copy of this protest was sent to twenty British chambers of commerce with the result that several of these bodies have given it unqualified support. In addition to this Messrs. Pauling & Co., Ltd., the contractors interested, issued a circular to the British trade associations in which they say:

"The objections of Russia and Japan are inconsistent with their treaty obligations, and our government's support of these objections is not founded on any convention, agreement or treaty. It is plainly a case of unnecessarily sacrificing British interests and of shutting the doors of a growing and important market to British trade for good and all."

The Foreign Office, it is reported, does not assume that the simple carrying out of a contract to construct a line in which there would be no British control involved, could be construed as a violation of the strict letter of the agreement, but it holds that it might be considered an infringement of its spirit.

The counter proposal of Russia that the construction, for the present, terminate at Yao-man-fu does not meet with favor.

Those interested in the concession see inconsistency in Russian opposition and the inference is drawn that there is a well defined understanding to which Japan, Russia, Great Britain and France are alleged to have subscribed, designed to prevent China controlling a line of railway to her borders in Manchuria, Mongolia, Tibet or French Indo-China and that the interest of the British government is thus sacrificed respecting Manchuria so that her influence in Tibet may be advanced. Whether this may be relied upon as an explanation of her attitude, the excuse offered by the Foreign Office for failing to support British contractors in Manchuria is taken by many Britishers in the Orient with a grain of salt. Officially, any such motive is denied.

The *Shanghai Times* compliments Mr. Thomas Mallard on his article "America in China" appearing in the *Forum* in disclosing to the world the reasons assigned Japan and Russia for their opposition to the railroad.

Japanese opinion resents the implication that the Tokyo government is, or has been, opposed to the construction of the Chinchow-Aigun line by China, and the *Japan Mail*, reflecting this general attitude, directs attention to the recent assent of the cabinet to the undertaking and says:

"There is one obvious discrepancy between the facts and their statement. The China Association is represented as considering this railway question a conclusive test of the accessibility of Manchuria to British capital in the face of Russian and Japanese opposition. But the truth is, as it seems to us, that the exclusiveness is mainly on the side of the Association so far as Japan is concerned. It is an old experience that error dies hard, and we do not at present recall any incident which illustrates the aphorism more vividly than does this Aigun-Chinchow Railway. For, the China Association *non obstante*, the country against which a policy of exclusion would appear to be followed is Japan. The Japanese Government has never objected to the building of a railway between Chinchow and Aigun, or to the investment of British capital in such an enterprise. On the contrary, the Tokyo Cabinet assented to the project from the outset, making only one condition, namely, that Japan should share and share alike with other foreign countries in furnishing the capital and contracting for the materials. In fact, Japan simply asks for that equality of opportunity which she is now wrongfully accused of denying to others. It is against Japan, then, that an exclusive policy is to be exercised, whereas the accusation is that Japan seeks to exercise that policy against others in this very case."

The *Times*, however, assumes a pro-Russian tone with respect to the opposition from St. Petersburg, and justifies Russia's attitude. This semi-official expression is no doubt largely due to a desire on the part of Japan to placate the American financiers, counteract the growing British opposition to the alliance and at the same time display a friendly attitude towards her northern neighbor. The *Times* says:

"Coming to Russia, it has to be admitted that she objects to the railway project, but no one would think of caviling at her attitude or denying her rights in this matter. A railway from Chinchow to Aigun would have been the opening of a new gate of access to Russian dominions, and would have had strategical importance of the highest character. Russia is absolutely justified in declining to endorse such a programme, nor can her reluctance be justly construed as in any sense subversive of the principle of Equal Opportunity. Especially has it to be noted that St. Petersburg softens its refusal in the Aigun direction by offering to sanction an alternative line giving direct access to Peking further west. Finally, not Russia alone, but also all impartial onlookers must be puzzled to find in purely commercial and industrial motives an explanation of China's anxiety to build a long and costly railroad in a remote and unfrequented part of her dominions, while neglecting to similarly equip provinces where a crying need for such facilities plainly exists."

Tokyo is accomplishing a difficult diplomatic feat with remarkable success and yet it matters very little to her which way the "cat jumps."

However, the British commercial interests are far from satisfied with the situation generally and while the allegation that there is an understanding among the different powers mentioned, including Great Britain, is denied, the suspicion remains, and it will take more than semi-official interviews to clear the atmosphere.

That the American financiers interested do not consider the Chinchow-Aigun Railway proposal a "closed incident" may be gathered from the following interview with a member of the group, from its New York correspondent, published in the N. C. *Daily News*:

"It is an exaggeration to say that we contemplate withdrawing. Of course, if events show that the railway cannot be built, we shall not continue to press the matter, but the present outlook seems to us to make it certain that the road will be constructed. We believe the work will be well uuder way within a year, at the most. The position of the British Foreign Office does not interest us at all. British protests or hostility will not hinder us in the slightest degree. Our interests are in the hands of the American State Department, and whatever attitude Sir Edward Grey sees fit to adopt will have no bearing on the position adopted by our Department of State. We mean to have the railway built, and it will be built. The Chinese Government has signed the rescript for the construction of the road, and though it is being held up, this is due only to temporary difficulties. It is causing us no uneasiness whatever, We are quite content to let matters move slowly, knowing they are moving in the right direction. It is impossible to make any public statement of the present trend of the negotiations, for the position is too delicate to admit of undiplomatic discussion, but we have every reason for believing we shall be successful."

The outcome of the controversy over this important line is awaited with great interest. Among the great majority of representatives of British and American interests there appears to be a growing appreciation of the Knox proposal respecting Manchuria. At first it was received with great reserve and through almost every British official and semi-official channel, disparaging comment was encouraged. This attempt to force opinion at the outset was successful, but slowly, yet surely, the practical benefits of the Knox doctrine, its application as a peaceful and desirable solution of vexing questions respecting Manchuria, consistent with the declared policy of the "Open Door" and the guarantee of China's integrity, and the principle of fair play and unselfishness involved, have been more and more appreciated. Indeed, we find a growing sentiment among the leading British commercial bodies deploring the sacrifice of British interests to diplomatic adventure that offers no adequate return. This influence will have to be reckoned with and the Foreign Office may yet be obliged to revise its position materially to quiet the protest of British foreign trade interests.

PHILIPPINE TRADE

The total value of Philippine foreign trade for the year ended June 30, 1910, amounted to 153,897,554 pesos, an increase of 36,219,674 pesos over the previous year. The imports amounted to 74,123,850 pesos compared with 55,588,964 pesos in 1909 and the exports were valued at 79,773,704 pesos compared with 62,088,916 pesos in 1909. The balance of trade in favor of the islands for the year was 5,649,854 pesos, an amount three times that of the previous term. The increase in export included hemp from 79,210 tons to 99,305, sugar from 21,285 to 94,155 tons and cigars from 2,696,000 to 83,931,000.

Of these exports 39,502,842 pesos worth went to the United States as against 20,508,174 pesos the previous year, while the American imports increased in value from 9,387,662 pesos to 21,552,256 pesos or more than double.

The increased trade is largely due to the limited free entry of sugar and tobacco into the United States.

The main feature of the year is the growth of American trade with the islands representing 47% of the exports against 33% the previous year and an increase in imports from 17% in 1909 to 30% in 1910.

PRESIDENT TANG SHOU-CHIEN'S DISMISSAL

The following edict was issued under date of August 23 cashiering President Tang Shou-chien of the Chekiang Railways:

"The Grand Councillors have submitted a telegram from Tang Shou-chien, ex-Commissioner of Education in Kiangsi province and President of the Chekiang Railways, accusing Sheng Hsuan-huai of being the chief culprit and originator of all troubles to the Kiangsu and Chekiang Railways and stating that he should not be allowed to return to his post, also praying that his appointment may be countermanded, or that he may be divested of control of railway matters so as to satisfy the people of the Empire. His words are mostly improper and exceedingly wild and rebellious. The Throne in the appointment of men has its own decision and Tang cannot be allowed to make improper representations at random. He merely seized upon this as a pretext to escape responsibility in railway affairs and to win for himself renown. Thus he has purposely made dangerous statements to excite attention and his cunning motive will not bear inquiry. Tang Shou-chien is hereby cashiered and is not allowed to interfere in railway affairs. This is intended to serve as a warning to those who seek to fish for praise and reputation and are cunning to avoid responsibility."

This action created a sensation and the Board of Directors submitted a petition asking that the decree be withdrawn. President Tang has been active in a campaign for the cancellation of the agreement between the Chekiang Railway Bureau and Peking. His dismissal is interpreted as an indication of the purpose of Peking to centralize control of railway construction in the Emipre.

MATERIALS FOR PAPER

In view of the proposed development of the paper manufacturing industry in Indo-China with a view to utilizing bamboo, as outlined by Hongkong and French capitalists, the report of Mr. Arthur D. Little, the official chemist of the American Paper Pulp Association, recently issued, may be of special interest at this time. Mr. Little has made exhaustive investigations to search out new fibers for this purpose in view of the rapidly disappearing supply of wood product. He places waste flax straw in the lead, then follows cotton seed fiber, cotton and corn stalks, wild American hemp, marsh grass, cogon grass and Manila waste. Among these, he gives bamboo a prominent place as may be gathered from his report as it appears in the '*Publishers' Weekly* in part as follows:

"Especially noteworthy in the development of the year is the serious and general revival of interest in bamboo as a source of paper stock. Its superlative value for this purpose was urged, you will remember, by Routledge in 1875 after his introduction of esparto into England. You may also remember that my report of last year refers to the very favorable conclusions as to bamboo reached by R. W. Sindall in his report to the British Government on available sources of supply of paper stock in the British Colonies. These conclusions are now amply confirmed by Raitt, who has recently published the results of numerous experiments of his own on the mill scale in Burmah, Bengal, Malabar and Straits Settlements, and by Richmond in the laboratory of the Bureau of Science at Manila. Raitt finds in bamboo a really inexhaustible raw material. He recommends the establishment of bamboo plantations so arranged that one-third of the whole plantation shall be cut over every year. This will secure absolute permanence of growth, and, in fact, such systematic cropping will increase production. Raitt finds the yields of bamboo to be 11 tons per acre where the growth was poor, 18 tons with moderate growth, and 44 tons per acre with luxurious growth. The best yields of fibre, 44 per cent., and the best results in treatment were secured with three-year old shoots. The internodal pieces alone were digested, the rejected nodes amounting to 8 per cent. of the total weight. The stems were cooked at 60 pounds pressure for ten hours, with 30 pounds of 76 per cent. caustic per hundredweight of dry bamboo. The fibre bleached to good color, with 20 pounds of bleach per hundredweight.

"Raitt further finds that the stems were easily reduced by the sulphite process, giving a yield of 51 per cent. and bleaching to a brilliant white, with 16 pounds to the hundredweight. He estimates that in a 200-ton sulphite plant at Rangoon the cost of bamboo fibre will be $24.30 a ton.

"Richmond, whose excellent work in the Philippines deserves the highest credit, finds that it is quite unnecessary to remove the nodes prior to cooking, provided the stems are first passed through crushing rolls and afterwards, for convenience of packing in the digester, cut to 3 or 4 inch lengths. He obtains from the different varieties of bamboo yields of 40 to 43.7 per cent. of bleached fibre by the soda process. The sulphite process gives 43.5 bleached fibre, which puts bamboo on about the same basis as wood in this regard. The unbleached sulphite was nearly as white as the thoroughly bleached pulp.

"The importance of these figures becomes evident when we consider that we have in bamboo a raw material directly comparable to wood in many respects, but with no bark to remove,

THE THIRD FIGURE FROM THE LEFT, SEATED, IS THE LATE LU CH'UAN-LIN

THE LATE LU CH'UAN-LIN

By the death of H. E. Lu Ch'uan-Lin, Grand Councillor and Grand Secretary, last month, China loses another of her elder statesmen who held a high place in the councils of the nation. An Imperial Decree under date of August 27, conferring posthumous honors, contains a touching tribute to the deceased statesman and of which we quote:

"Grand Secretary Lu Ch'uan-Lin was patriotic, pure, intelligent, upright and of unbending strength of character. From a member of the Hanlin College he was appointed a District Magistrate, and as his capabilities were specially appreciated by the late Emperor, he filled high provincial posts and attained to a Viceroyalty. In carrying out his duties he shirked neither labour nor ill-will and in deliberation upon important measures displayed farsighted and profound acumen. Wherever he bore sway, officials dreaded and the people loved his rule and much success was attained.

"When he led troops to protect the Court he accomplished yeoman service in determining plans and doubts. He was promoted President of a metropolitan Board and entered the Grand Council. Since Our accession, We entertained regard for the aged and experienced statesman and reposed trust in him, appointing him Grand Secretary with the Brevet Rank of Grand Guardian of the Heir-Apparent.

"In his service of over fifty years in the capital and provinces he committed not a deed of impropriety, nor uttered a deceitful word. In official duties he would forget private ends and was consistent in conduct from beginning to end. He has attended duties for a long time in the Grand Council and he served with the utmost sincerity. He was faithful to the last and rendered much assistance.

"On his illness, contracted some time ago, he applied to be relieved of his important offices, and had been granted leave of absence. We bestowed upon him quantities of ginseng and had been in hopes that he would have recovered and We should be able long to rely on his assistance. We have suddenly learnt of his demise and deeply condole therewith. Our sorrow is all the more aggravated at these deaths of old Ministers when troubles beset the State. A Tolo pall is conferred upon him, to cover his remains. Prince Tsai Jun (3rd Order) is commanded to head ten Officers of the Imperial Guards and pour out libation in his honour at sacrifices offered up on Our authority. A posthumous title should be bestowed upon him and the brevet rank of Grand Guardian is conferred.

"Marks of honour should be bestowed upon him on the scale of a Grand Secretary and his tablet shall be enshrined in the Temple for the Sages and Virtuous. A sum of Tls. 3,000 should be paid out of the Treasury of the Privy Purse for his funeral expenses.

"All records against him in office shall be expunged and the Ministry concerned shall look up and report on the marks of favour to be conferred. When his remains are conveyed to his native place the local officials on the way are ordered to devote proper attention to the cortege. His son, Lu Hsun-li, Expectant Taotai of Kiangsu, is appointed Expectant Director of a Metropolitan Court of the 4th Grade, and his grandson, Lu Hsiao-pan, is appointed Expectant secretary of a Ministry. We thus hope to show Our sincere remembrance of a faithful Minister."

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and much more easily reduced to pulp by either the sulphite or soda process. Bamboo requires a weaker liquor and much less of it, and is reduced in less time with far less fuel consumption. A properly situated mill is assured of a regular supply, with a yield per acre every third year greater than that resulting from the cutting over of well grown spruce lands of good stand. Bamboo, in fact, has been known to grow two feet in three days in the Philippines. It is interesting to calculate from Raitt's figures for moderate growth that only about sixteen square miles is required to maintain indefinitely the supply of bamboo for a 100-ton mill.

"Two years ago I called the attention of the Association to the suitability and importance of bamboo as a source of paper stock, and referred to the initial suggestion for its utilization in this direction made thirty-five years ago by Thomas Routledge, as well as to the recent investigations of Richmond in the Philippines, Raitt in Burma, and Sindall in India.

"The subject has commanded considerable further attention during the year just past, and among the several articles which have appeared with reference to it special mention should be made of the monograph by Sindall, entitled "Bamboo for Papermaking," which is printed on an excellent quality of book paper made from bamboo. There appears to be no room for doubt that bamboo is one of the most promising, if not in fact actually the most attractive of the new sources of paper stock available at this time. It has no bark, it is much easier to treat than wood on account of its capillary sap tubes, and although Raitt advises otherwise, it is not, according to Richmond, even necessary to separate the nodes, which are perfectly reduced, provided the stem is first put through crushing rolls. The yield on the commercial scale is about 45 per cent. of bleached fibre, while the average yield per acre is 5 tons of bamboo.

"Bamboo stems are commonly cut at a standard length of 20 feet. The large bamboos have an average diameter of $2\frac{1}{2}$ inches, small bamboos of $1\frac{1}{2}$ inches. The number of 20 foot stems required for 1 ton of bamboo pulp is 440 in case of large bamboos, and 720 in case of the small varieties. Seven hours' treatment at 60 pounds pressure with caustic soda having a specific gravity of 1.075 is sufficient for its reduction, and the product reduced to good color with 6 per cent. of bleaching powder. The fibre is reported to work exceedingly well upon the paper machine.

"Even at the present time, when no systematic exploitation of the production of bamboo is in vogue, the large stems selected and intended for building purposes cost only *6s. 6d.* per 100, and the price of a quality suitable for papermaking should be substantially less. Mr. Sindall estimates that a ton of unbleached bamboo pulp can be produced by the soda process in a mill within reasonable distance of the bamboo area for about £5 *10s.* Bamboo grows with such rapidity and is reproduced so easily that, according to Raitt's estimates, a piece of land 4 miles long and 5 miles wide is sufficient to supply a mill making 300 tons of pulp per week with the 35,000 to 36,000 tons of bamboo required as an annual supply."

The forests of bamboo found in every oriental country increasing in area every year without any care should offer a most desirable field for exploitation, and, by proper cultivation, the present area could be made much more productive than at present.

VISIT OF THE AMERICAN MERCHANTS

The visit of the representatives of the Chambers of Commerce of the Pacific Coast to China marks another advance in the interests of better understanding between the two countries so closely associated in international trade. We are satisfied that their tour will prove a revelation in many respects. Outside the warm hospitality that is sure to be extended to them, the American businessman will be greatly impressed with the enormous producing capacity of the Chinese people and the evidence of progress in the introduction of modern methods which will add many times to their potentiality in this direction.

According to the *N. C. Daily News*, their tour will cover a very large territory. They will be met at Yokohama by H. E. Y. C. Tong and become the guests of the Chinese Chamber of Commerce of Shanghai who have set aside three days of the program for sightseeing in the settlement which will include a Chinese dinner at Shang-Suho's Garden and a reception at the International Institute.

"On Monday, the 18th instant, the party will start for Hangchow in a flotilla of houseboats, to see the West Lake, the famous temple and the Bore. While at Hangchow an outdoor luncheon will be given in their honour, and there will be an elaborate display of fireworks. Returning to Shanghai by special train the party will devote Thursday, September 22, to further sightseeing, and it is hoped to arrange a military drill for their benefit at the Nanyang College. Then, by courtesy of the Shanghai-Nanking Railway a special train will convey them to Nanking, where the following three days will be spent. Lunch will be served at Soochow en route. At Nanking the party will find plenty to interest them in the Exhibition, Ming Tombs and silk factories, and adequate hotel accommodation has been secured for the visitors.

"On September 27 they will travel by another special train to Chinkiang, where a steamer, placed at their disposal by the China Merchants' S. N. Co., will carry them to Hankow, after a five hours' visit to the Ta Yeh Iron Mine.

"In all the provinces to be visited the officials have received instructions from Peking to do everything in their power to entertain their American guests. It is probable that the party will stay on board the steamer at Hankow, but representatives of the Hanyang Iron Works, and of the Wuchang Viceroy are now in Shanghai, arranging a programme in conference with the local Chinese Chamber of Commerce. Proceeding to Peking by special train, the party will make a stay of four days in the capital, and at Tientsin, where they are expected to remain for two days. Wang-Chu-lin, President of the Chamber of Commerce, and Sun Chung-ying, of the Ministries of Finance and Commerce, are making active preparations for their reception. The guests will be met at the station by the Chinese Committees, who will escort them to their respective hotels, and then, in small groups, accompanied by English-speaking Chinese gentlemen, they will be shown all that there is to see at Tientsin. On the day of their arrival they will be invited to a dinner in the pleasure grounds of Sun Chung-ying, and the following day they will visit the Peiyang University on the Viceroy's private yacht. Leaving Tientsin on a specially equipped steamer, the party will visit in turn Chefoo, Tsingtao, Foochow, Amoy and Canton. At Chefoo they will see the wild silk industry and vineyards; at Tsingtao the Governor and Chamber of Commerce have invited them to stay for a short time; local industries and a run along the new railroad of eighteen miles will occupy their time at Amoy; leaving their steamer at Pagoda Anchorage they will visit Foochow, where the Viceroy and prominent Chinese are making preparations for their welcome. The party is expected to see the largest tea hongs, the mint, and a specially prepared exhibition of the most important manufactures of the locality. Mr. Lin I-yu of the Foreign Board has invited the party to tiffin. Preparations for their welcome are also being made at Canton."

It has been proposed by the press of Hongkong to arrange a conference between the visitors and the Chamber of Commerce there.

The Philippines may also be honored. Manila is doing everything to induce the whole party to become its guests, as may be gathered from the following comment in the *Cablenews-American*:

"As is well known the Manila Merchants' Association has plans on foot to prevail upon these business men from the Pacific Coast to visit Manila at the close of their tour in China. It is understood also that Commissioner Elliott has some plans to aid the merchants in bringing here these guests of the China coast chambers of commerce. The men composing the party come from the leading commercial centers on the western coast of the United States. They have been chosen by the chambers of commerce and other commercial bodies of the cities they represent and are in every sense of the word representative American business men.

"It is hard to imagine a party of men more to be desired as visitors to Manila. It would be a great misfortune for Manila should the Manila Merchants' Association be unable, for any reason, to prevail upon these men to come here for a visit. It is understood that the Manila Merchants' Association will spare no effort to get the party here. President Erlanger of the Association has been in correspondence with the leaders of the party and has plans laid by which it is hoped to have the party come here from Canton or when the itinerary in China is completed.

"A representative of this paper talked with a number of the delegates before they sailed and succeeded in interesting them in the Philippines. They expressed themselves as very desirous of coming here if an opportunity was offered. That opportunity will be given by the Manila merchants and the Government if present plans go through and the chances are that the whole party will be found in a receptive mood."

THE TOKYO FLOODS

The terrible floods that visited Tokyo and the surrounding country, last month, resulting in enormous loss of life and property was the most serious in the history of the country. It is estimated that over 1,200 persons lost their lives or were seriously injured and several hundred are reported missing. Railway property alone was damaged to the value of approximately yen 2,000,000 according to the report by the Home Department. Relief measures were promptly inaugurated by the authorities and it is estimated that over 200,000 refugees were cared for. Every public building was turned into an hospital for the injured. Worldwide sympathy was expressed throughout the globe and contributions came pouring in from Europe and America.

The extent of the damage has not yet been fully realized. The loss in houses totally destroyed is reported to reach 4,000 and submerged buildings 150,000. Embankments were reported destroyed and 500 bridges washed away.

The railway service was almost completely demoralized and remained so up to August 13 when the Shimbashi and Shidzuoka service was resumed in part and it will take months to complete repairs. On August 20, traffic was resumed on the majority of the lines but there were few of them where the entire distances could be covered.

The typhoon passed over the Tokkaido on August 8 and wrecked a bridge near Kakegawas. The rain fell in torrents and during August 9 a large section of the bank of the Oigawa gave way. Later, at noon on the 10th, the Yahase river showed a rise of eight feet. Railway traffic was suspended in the vicinity of Magoya. Tunnels collapsed, cuts became filled with landslides and bridges went out.

The loss will be by no means confined to the towns as all the country in the vicinity was inundated and the rice and other crops will invariably prove a complete loss.

The authorities, however, are to be congratulated upon the splendid organization that featured the direction of relief measures and the railway officials merit unusual recognition for the untiring energy displayed in removing debris and obstruction, and clearing and repairing the tracks so as to resume traffic as quickly as possible.

It is estimated that the rain fall for the 24 hours ended 10 a. m. on August 10 measured 344 m.m., an unprecedented record.

SUCCESS OF THE PHILIPPINE PENAL COLONY

The system inaugurated by the Philippine Bureau of Prisons for reclaiming criminals by offering them every inducement to become law abiding citizens has given very satisfactory results. In no division of the bureau, however, even in the industrial training department, has more progress been made in that direction than that reported from the Iwahig penal colony.

This colony includes about one thousand convicts and their families, who have been rewarded by assignment there for good conduct. They are put upon their good behavior. All vigilance is relaxed. The members of the colony conduct their own affairs without outside interference. In fact it is a little republic. They elect their officials, control the policing and other functions of government and, with the aid given by the Insular Government, will soon be self-supporting.

Agriculture is encouraged. Every convict is given a plot of ground and at the expiration of his term is given a deed. There are already 25,000 cocoanut trees in the colony and other indications of industry. Good order and discipline has been maintained and, so far, the officials are more than satisfied. Indeed, many convicts have elected to remain and cultivate their lands after their terms expired and are now independent and law abiding. And, what is most gratifying, in no instance has a convict, who served a term in the colony, reverted to a life of crime. The treatment and encouragements received has been a revelation to them, and there is now no question but that a large percentage of Filipino criminals may be made good citizens by removing them from the evil influences of association with the pronounced degenerate type of law breakers, and encouraging them to industry in more wholesome atmosphere.

THE NORTH CHINA DAILY NEWS AND HERALD'S DIAMOND JUBILEE

Sixty years of pioneer service as an exponent of British journalism in the Far East, reflecting the aspirations of the British communities in China and maintaining its position as a leader among the publications in Eastern Asia, is the enviable record to the credit of the *North China Daily News and Herald*. The first issue of this newspaper bore the date line, August 3, 1850, comprised four pages, and as one contemporary puts it, the proprietor and the editor wore the same pair of shoes. From that day until the present it has been a faithful chronicle of events and conservative in its editorial comment. It has a splendid record of achievement. We congratulate the management and extend our best wishes for the continuance of a prosperous career for this stalwart pioneer journal.

THE "EASTERN ENGINEERING"

We are in receipt of the initial number of *Eastern Engineering* issued by the British Press, Ltd., London, as a companion of *African Engineering* published by the same Company. The management announces that:

"*Eastern Engineering*, the Advocate of Anglo-Oriental interests, is a monthly companion journal to *African Engineering*, owned by the same proprietors, the British Press, Ltd.

"The policies of *African Engineering* and *Eastern Engineering* are identical, viz.:—The staunch advocacy of the best British engineering interests throughout their respective spheres, and the strengthening of the business relations between overseas purchasers and home manufacturers."

Eastern Engineering will devote all its energy to advancing British interests in the Far East and as evidence of its sincerity the advertising department announces that "no advertisements of continental or American manufacturers can be accepted on any terms." The first number is well gotten up and contains a number of interesting articles on engineering.

THE "CHINA NATIONAL REVIEW" ANNUAL

"The provinces of China" is the title under which an interesting collection of reprints from the *China National Review* has been issued as an annual contribution by that publication and makes a valuable addition to the standard literature devoted to the diffusion of reliable information respecting the vast empire of China. This valuable work also contains a history of the first year of H. I. M. Hsuan Tung and an account of the Government of China, a carefully prepared record of events that should find a place in the reference libraries of those who desire to keep in touch with Cnina's regeneration.

The foreword by Colonel C. D. Bruce contains two short, terse paragraphs strikingly indicating the "long felt want" that this publication is admirably designed to fill at least in part.

The Colonel writes:

"It has been stated, though the writer cannot vouch for the truth of the story, that at the time when Wei-Hai-Wei became a British outpost, the Foreign Office in London were under the impression that it formed a part of the Kowloon Hinterland at Hongkong.

"Although the story may not be strictly true, it is well known how colossal, until the last few years, has been the ignorance of all matters Chinese in England. Geographically, physiologically, philologically and politically, China has remained until a few years ago an almost unknown quantity to millions of otherwise well informed dwellers in Europe and America."

JAPAN IN KOREA

(Continued from page 128)

noticeable in the war against smallpox. Vaccination was practically unknown among many classes. The corpse of a child that had died from disease, hung on a city wall or a tree thereby, constituted the popular charm against the menace. However, an army of Japanese vaccinators has been scattered over the country and during the year 1908, 544,630 persons were vaccinated and greater facilities made available the following year.

Under the direction of the Bureau there is an experimental section connected with the Tai-Han Hospital at Seoul where a vaccine farm and other divisions for the preparation of serum, etc., are located. At Seoul a Sanitation Association, subsidized by the Korean and Japanese Governments, has for its purpose the maintenance of model sanitary conditions in the capital for the benefit and example of the other cities and towns in the provinces.

The Tai-Han Hospital is a government institution and it is proposed to add a system of provincial hospitals so that each section will be provided with means for caring for the sick. Besides the government hospitals there are 13 Japanese settlement hospitals and in almost every missionary colony throughout the country there is found a modern hospital, among which special reference is made in the Resident General's report for 1909 to the Severance Hospital, endowed by L. H. Severance of Cleveland, Ohio.

Water Works.—Inadequate and unsanitary water supply has been largely responsible for the danger from epidemic diseases and plans covering an expenditure of approximately yen 5,000,000 were approved in 1908 for the installation of water supply in Chemulpo, Pying-Yang and Fusan. The only modern water supply in Korea up to that time was in Seoul which was completed and formally opened in August, 1908. The concession was granted Messrs. Collbran and Bostwick in 1903 who sold their rights to the Korean Water Works, Ltd., a British company in 1905. Construction began in 1906. The supply is taken from the Han River, three miles from Seoul. The water is pumped into settling reservoirs having a capacity of 2,496,000 gallons, then passes through sand filter beds by gravitation to a clear water reservoir with a capacity of 250,000 gallons. It is then pumped for a distance of two miles through a 21-inch steel main to a service reservoir, capacity 1,500,000 gallons, and a top-water level of 287 feet altitude to be carried through a 21-inch main to the city. There were 200 public and 700 service hydrants installed in 1909.

The Chemulpo water works included the construction of a pipe 25 miles in length to the intake. This work was finished in 1909 and the distribution system in the city recently concluded. The cost was approximately yen 2,250,000. The Fusan waterworks have also been opened at a cost of yen 1,200,000. With the exception of the Seoul works, the construction was under the direction of the Bureau of Civil Engineering.

At Mokpo the Japanese colony installed a gravity system costing yen 150,000.

With the installation of water supply systems, the prospect of substitution of modern sewage systems for the present inadequate use of pails and open drains, grows brighter, and while little has been accomplished in this direction, the Japanese are considering ways and means to carry out an extensive program

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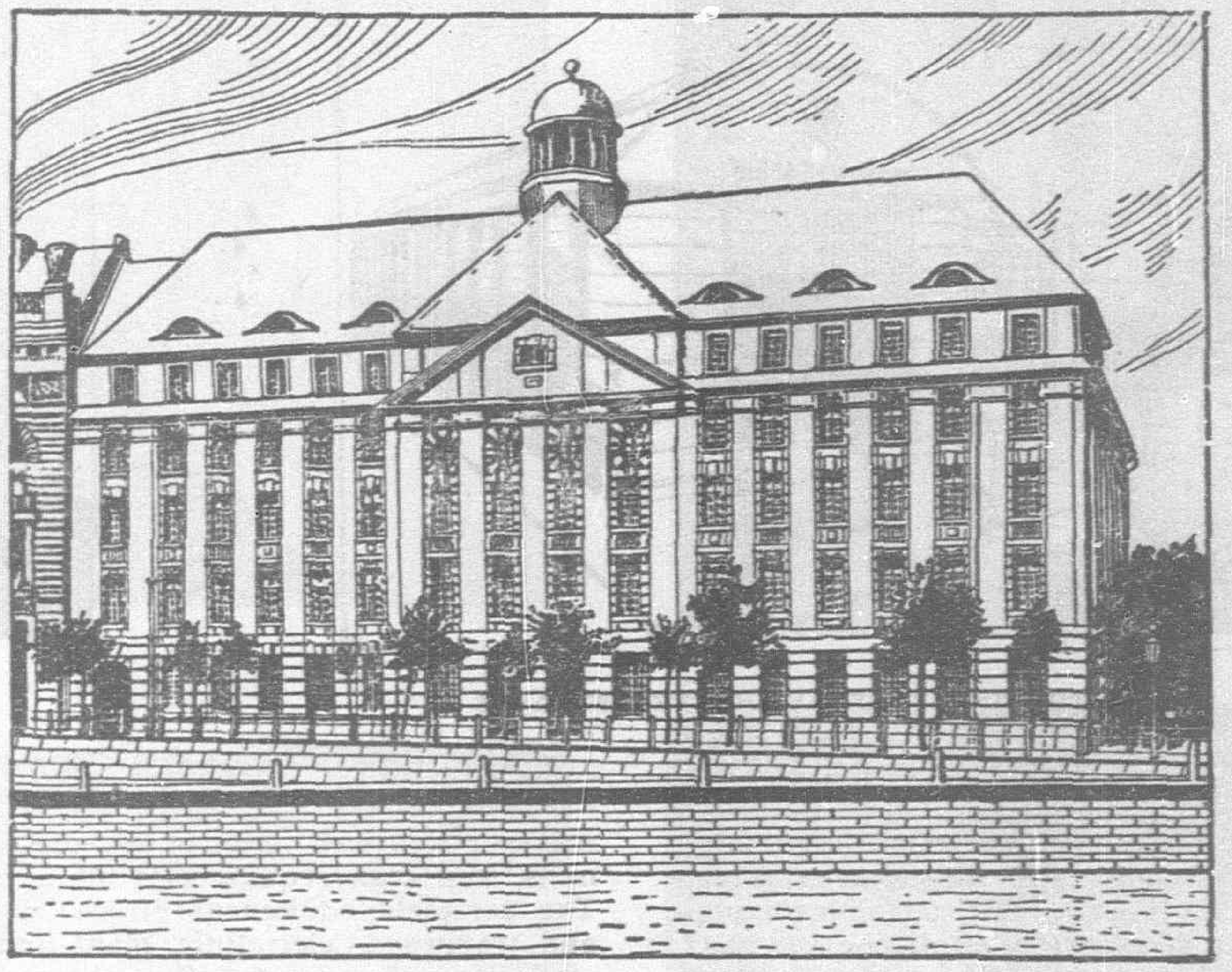
THE ALLGEMEINE ELEKTRICITAETS GESELLSCHAFT

Throughout the entire history of commercial progress within modern times, there is probably no other industrial undertaking which has had such a rapid growth, and which is of such general interest as the Allgemeine Electricitaets Gesellschaft of Berlin.

The inauguration of this Company some 26 years ago was due to the initiative of Herr Emil Rathenau, who secured the Edison patent rights for Germany, and subsequently proceeded to the formation of a company with a capital of Mks. 250,000 for the technical study of these patents. In addition to Herr Rathenau, the original staff of the Company consisted of only one other employee. In consequence of its success, however, it was enlarged in the year 1881, and, under the title of "The German Edison Co.," began with a capital of 5 million marks. The firm's present title was assumed in 1887, and such has been its progress since that date, that to-day there are more than 106,000 customers on its books; it has a fully paid up share capital of 100 million marks and reserve funds amounting to 50 million marks, while the total number of employees exceeds 34,000, figures which, together with its large factories, enable it to rank amongst the first electrical manufacturing companies of the world.



HEAD OFFICE, BERLIN

The principal factories are the incandescent lamp factory, the cable works and the motor car factory.

The factory in the Schlegal Strasse in which the A E G first commenced operations, is now devoted solely to the production of auxiliary supplies. In one department micanite is manufactured in large sheets from Indian and Brazilian mica, and is subsequently employed for a great variety of purposes. In another department insulating materials of paper, linen, cotton, canvas, etc., are produced, while a third department is devoted to the manufacture of screws, nuts, spindles and other similar articles.

The incandescent lamp factory in the Sickingen Strasse is a six-storeyed building having a workshop area of 15,000 sq. meters. In this factory nearly 15 million lamps are manufactured annually, the average daily production being 50,000 lamps. Since the day this factory was opened, over 100 million lamps have been manufactured.

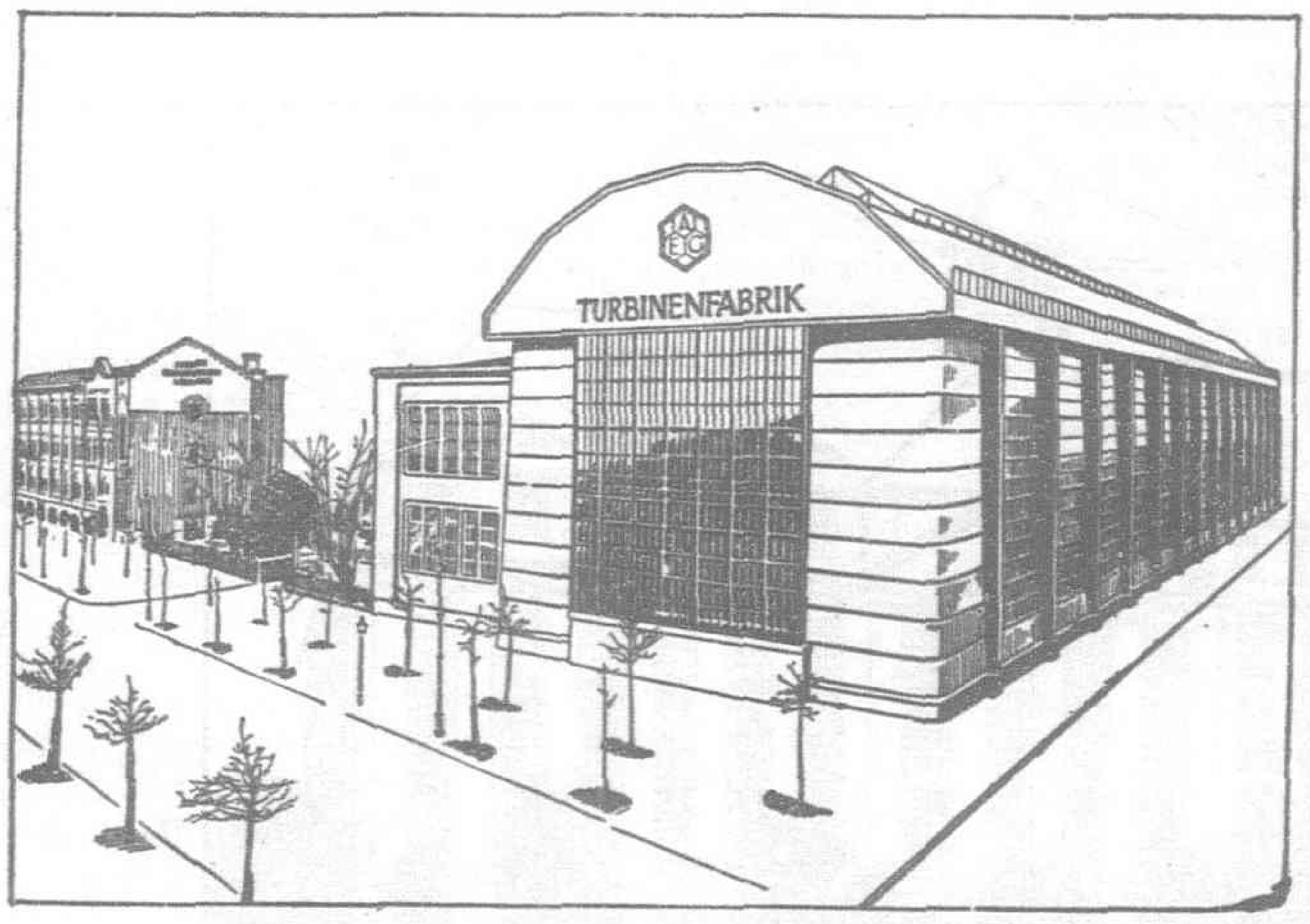
On taking up the construction of electric motors and generators it also became necessary to erect a special factory for the manufacture of apparatus. This factory, which is situated in the Acker Strasse, was built in 1888, and considerably enlarged in 1905. It has a workshop area of 89,000 sq. meters and employs more than 7,000 hands. Over 15,000 different articles are manufactured in this building. In addition to our lamps and electrical apparatus of every description, all classes of fittings are also produced.

In consequence of the rapid development of the Company it was found necessary in the years 1905-1906 to erect a special factory for the construction of large machinery. This factory was built in the Brunnen Strasse close to the Humbolt Haim; the number of employees here is also between 7,000 and 8,000. During the business year 1908-1909 more than 47,000 machines and transformers with a total output of 1,250,000 were constructed in this factory.

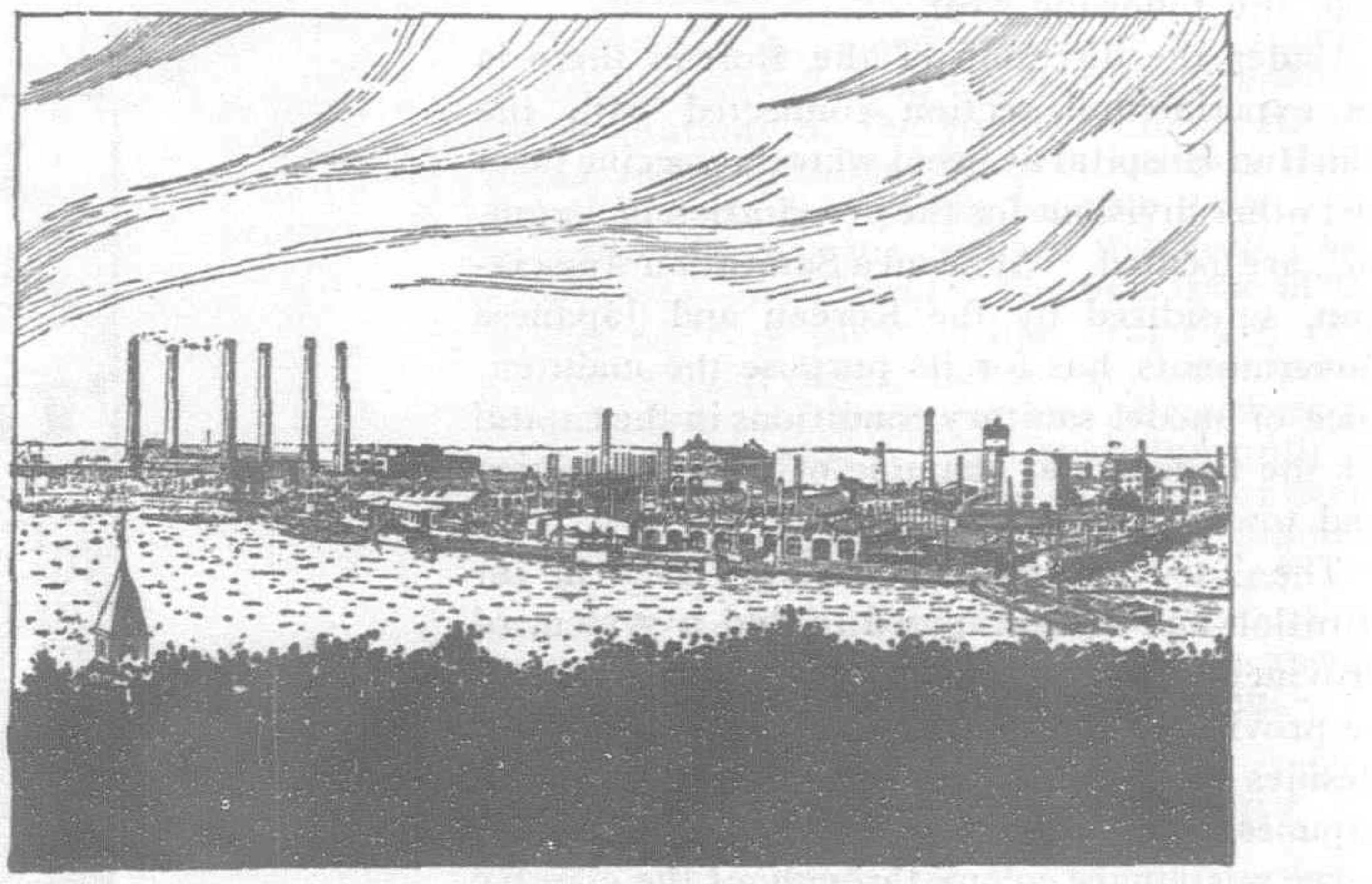
In the year 1903 a factory was erected in the Hutten Strasse for the construction of steam turbines, which began work in April 1904 with 365 workmen. Six months later, however, this number was increased to 1,055, and at the present day there are over three thousand employees. In addition to the Riedler-Stumpf patents which the A E G first acquired, they also obtained the patent rights from the General Electric Co. of America for the construction of the Curtis turbine. The turbines constructed at the present day have been developed from these patents.

The cable works of the A E G are situated at Oberschoneweide six miles distant from Berlin, and cover a ground area of 100,000 sq. meters. In the spring of 1898 the cable works, copper rolling mills, the rubber works, and a department for insulated wires were opened here. Since that date further branches have been added. In 1899 a department for the manufacture of telephone cables was opened. Two years later, the sheet metal rolling mills and the pressed metal department (in which copper, zinc, tin and aluminum are worked in large quantities) began operations. The works are situated on the river Spree, and all raw materials are delivered by water. The quantity of copper used in these works yearly amounts to approximately 20,000 tons, this quantity forming about 1-7th of the total annual copper consumption of Germany. The number of employees in the A E G cable works now exceeds 5,000.

In the year 1902 an additional factory was constructed adjacent to the cable works, for the manufacture of motor cars. It was very soon found necessary to increase the size of this latter factory, which in the year 1905 had a work-shop area of 14,500 sq. meters.

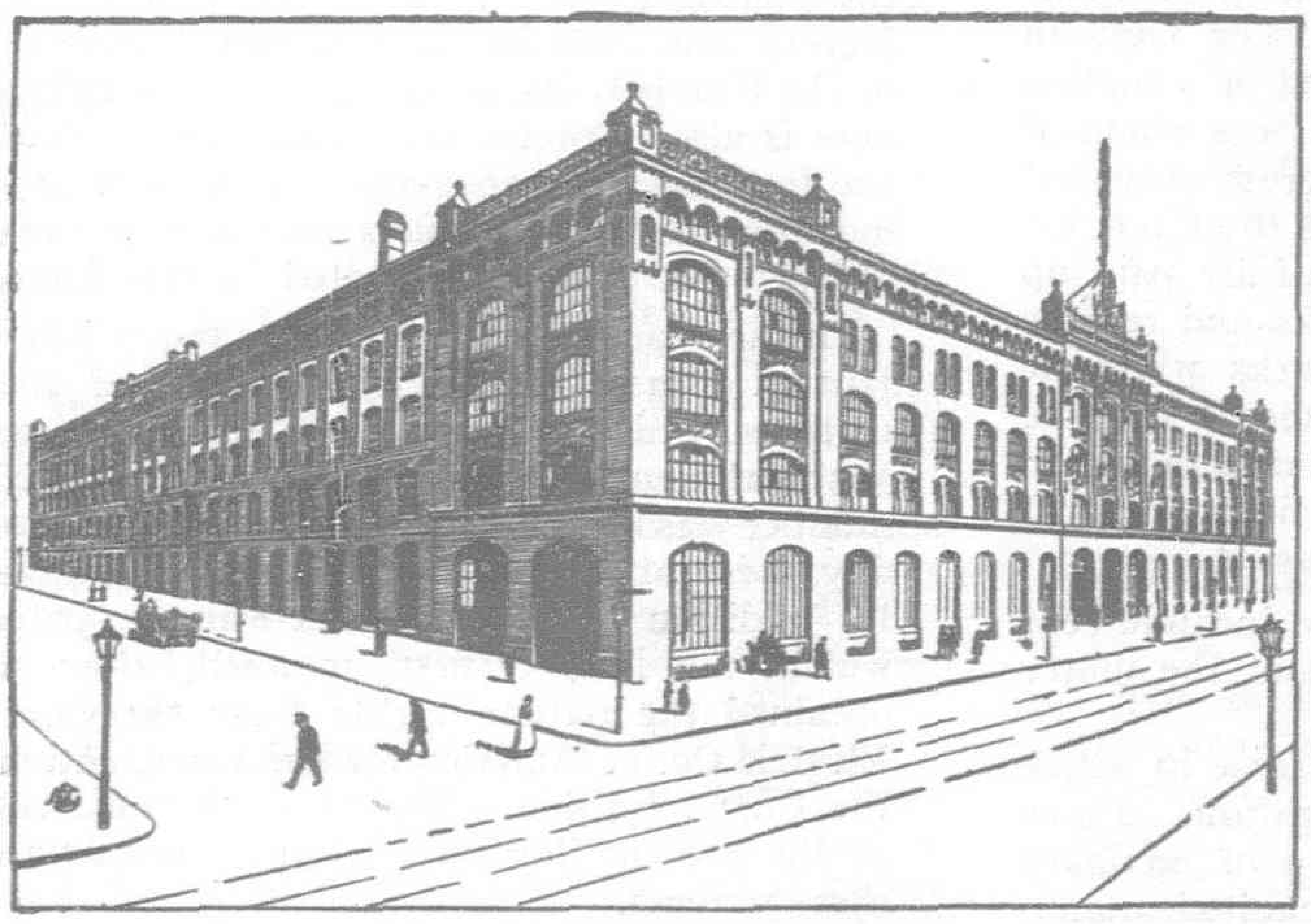


STEAM TURBINE FACTORY, HUTTEN STRASSE

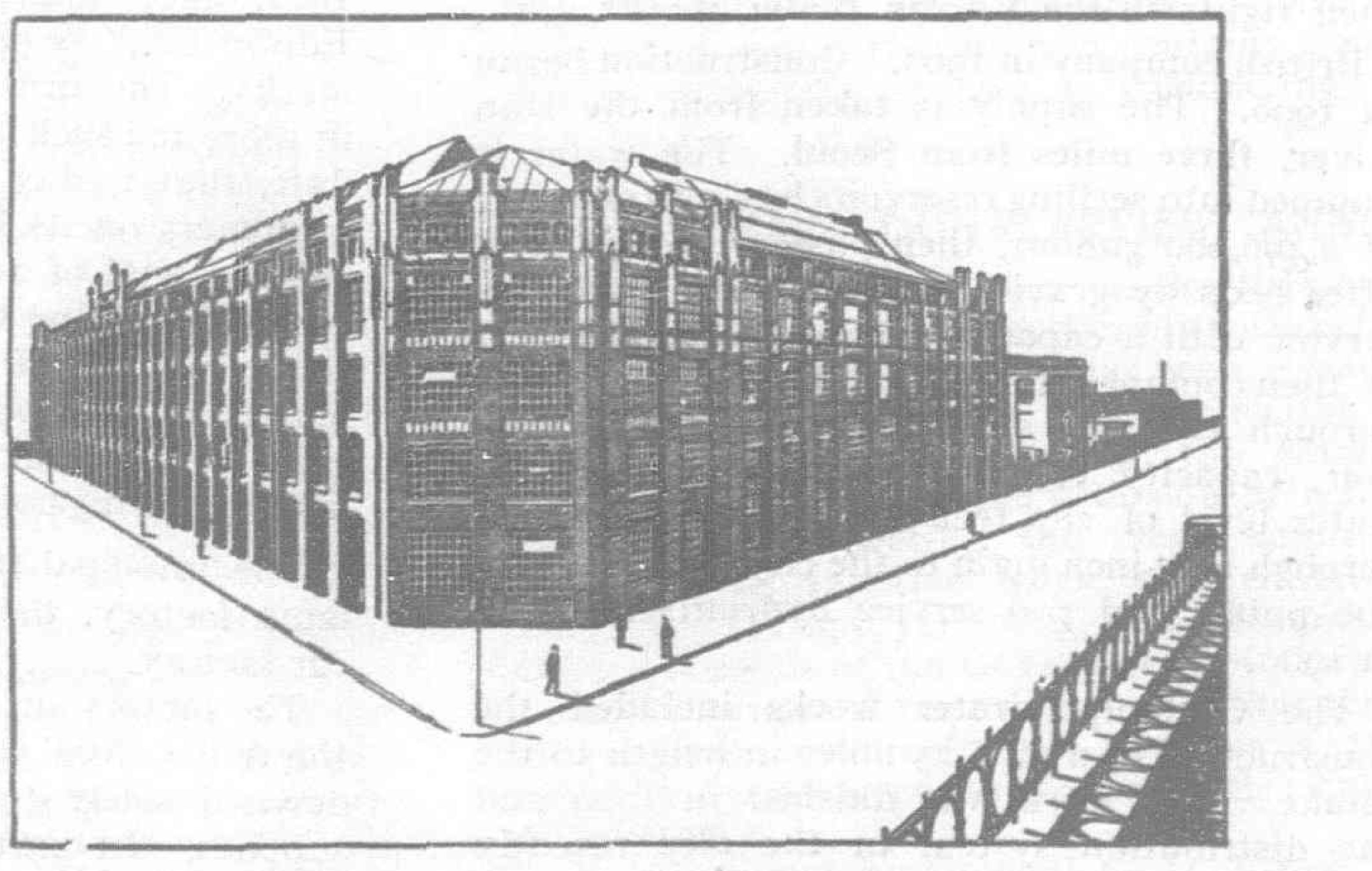


CABLE WORKS, OBERSPREE

Notwithstanding these numerous large factories, the Company still experiences some difficulty in executing the multitude of incoming orders with the necessary promptitude and has, therefore, found it advisable to acquire a further large site measuring nearly 200 acres in the neighbourhood of Spandau. This new site is admirably situated, both as regards the delivery of raw material and the despatching of finish manufactures, having excellent connection with the main railway line, and also lying on the Berlin-Station ship canal.



APPARATUS FACTORY, ACKER STRASSE



LAMP FACTORY, SICKINGEN STRASSE

It will be of interest to mention a few of the most important of the great number of manufactures produced by the A E G. Among these are: electric motors and generators, from the smallest to the very largest outputs; steam turbines, which are constructed up to the largest practicable sizes for central station work, and also, more recently, for driving large marine propellers, further every class of apparatus and switch-gear, measuring instruments, electricity meters, carbon and metallic filament, incandescent lamps, nernst lamps, arc lamps and mercury vapour lamps, fans, cables, conducting and insulating material of every description, motor cars, welding machines, machine tools and mining drills, railway signalling apparatus, electric tempering furnaces, not to mention countless articles. With these extensive manufactures the A E G also combines the insulation of the electrical plants of every size and description, such as complete electric lighting plants for towns and industrial centres, electric power transmission schemes specially for mining and iron works, pumping plants, electric hoists and transport devices, electric driving of rolling mills, and crane equipments for all purposes. The complete equipment of electric railways and tramways, eletrolytic plant and ship installations also come within the range of the Company's work.

The greatest care is devoted to the construction of all machinery and apparatus, and all special requirements and conditions are carefully observed. The quality of the work is, therefore, of the very best. Much attention is also given to the artistic appearance of the finished manufactures. With this object in view, the services of the well-known artist, Professor Behrens, have been engaged, and it is to the skill of this gentleman that the pleasing external appearance of many of the Company's products is due.

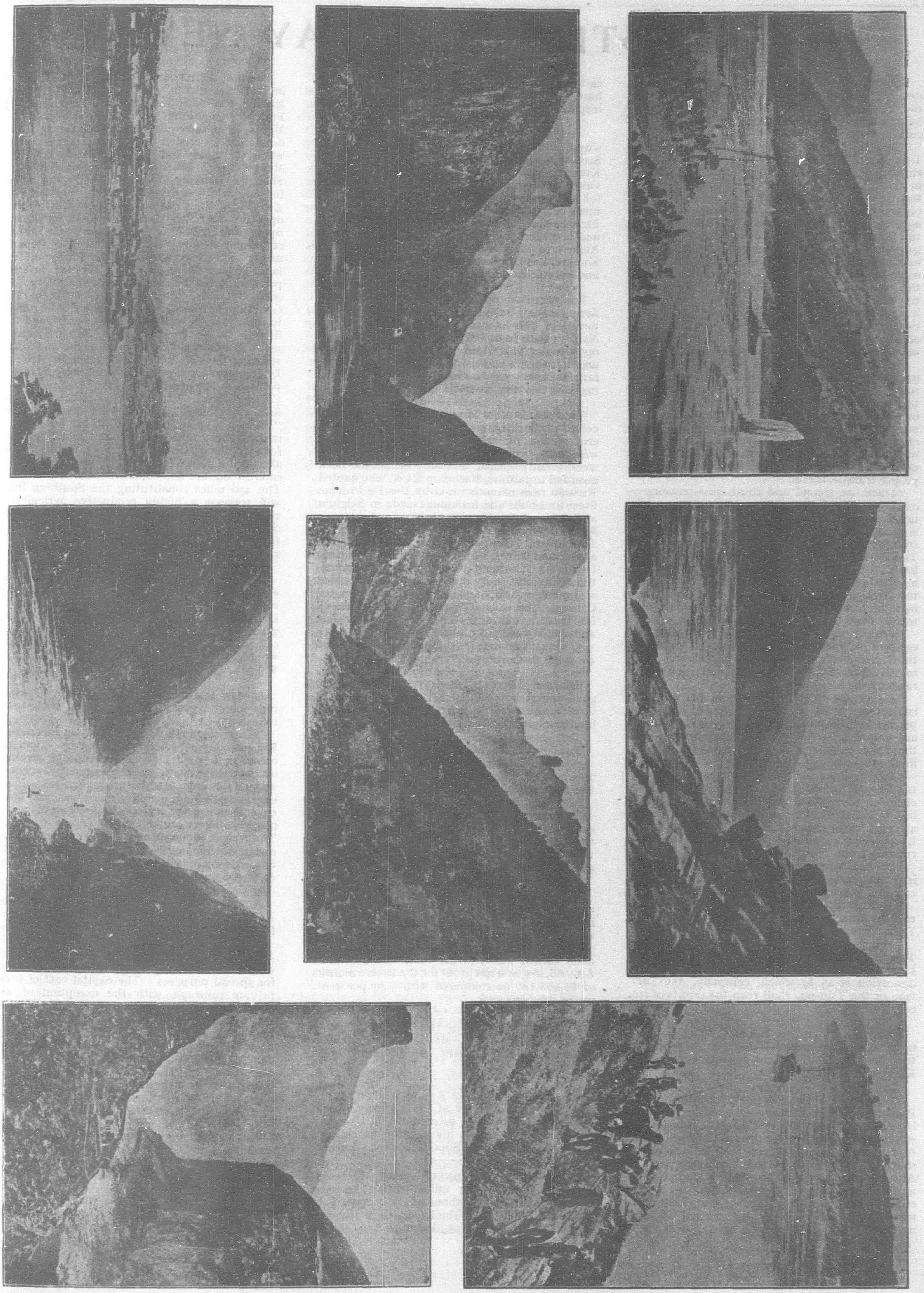
Apart from the A E G proper, numerous auxiliary companies have been formed, covering other branches of manufacture, such as the Wireless Telegraph Company, The Dirigible Airship Company for exploiting the Parseval airship, and the Wright Flying Machine Company, which has acquired the sole German rights for the Wright patents.

The friendly relations existing between the A E G and the Electric Company of America, and the various Thomson Houston Companies have resulted in the exchange of many patent rights with these companies, and arrangement which has been of considerable assistance to the A E G in the extension of its operations.

A well organized system of offices and agents arranges for the sale and installation of the Company's manufactures in foreign countries, and there is no German town of any importance in which an office of the A E G does not exist. The countries in which the Company is not directly represented are Holland, Russia, Norway, Denmark, Spain, Portugal, Switzerland, Austria, Sweden, The Balkan States, Italy and England, and outside Europe, in Argentine, Brazil, Columbia, Egypt, Guatemala, Japan, Asia Minor, Mexico, The East Indies, Siberia, Peru, The Straits Settlements, South America, Uruguay, The United States, Australia and China. In the last country the firm is represented by Messrs. Arnhold Karberg & Co.

Altogether, the A E G is closely connected with more than 30 subsidiary companies. There are over 30 installation offices for which there are six engineering departments at home and 90 offices abroad. The number of agencies outside Europe exceeds 40.

The wonderfully rapid advance of the firm to a world undertaking of the first importance is due to the tireless energy and unceasing work of its engineers and workmen.



THE GORGES OF THE YANGTSE RIVER

FAR EASTERN RAILWAY NEWS

South Shantung Railways.—A correspondent of *Shanghai Mercury* gives a description of the Yinsien coal railway and plans for further extension in South Shantung. Of the Yihsien coal line he says:

"This road is technically known as the Tai-Tsao Railway, because it runs from Tai-er-chwang, the principal port on the Grand Canal in South Shantung, to Tsao-chwang 90 li to the north, the village nearest the chief coal mines of Shantung. Work began on it over two years ago, the main promoter being H. E. Chang, at the time Salt Commissioner of Shantung. The gentleman and others associated with him have extensive interests in the coal mines. The road construction was held up for some months by the refusal of certain wealthy families along the line to sell the right of way to the railway. Trains are now running the entire length of the line, the largest bridge along the route, that west of Yinsien city, having lately been sufficiently advanced to permit the transit of trains.

"A flourishing trade in coal has already sprung up on the railroad. At present the mines are shipping about four hundred tons of coal daily to Tai-er-chwang by rail and they hope to soon increase it to 900 tons daily. They claim the mines are now putting out eight hundred tons of coal a day and they have mountains of it waiting for shipment, the yards at the mines not yet having been adequately prepared for its proper transportation.

"There are second and third class passenger carriages which are doing a fair business. A first class coach is also under construction. For sixty li the charge for this class is twenty coppers (tung-tse) and for second class forty coppers. The second class passengers go in coaches and have free tobacco and tea and are allowed a hundred catties of baggage, while the third class travelers go tealess on a flat car with no locally manufactured cigarettes to solace them by the way. They have sixty catties of baggage free.

"Freight is in four classes: First class ten coppers per hundred catties, second class, nine, third class, eight and fourth class five. The fourth class comprises lumber, etc. Cheaper rates by the ton or car.

"Such is the combination of coal and iron ore in Southern Shantung along the line of the Tsin-pu railway that the prospective railway kings are waging a battle as to who shall further tap the resources of Shantung's Pittsburg. Four lines are talked of.

"First, a line from Yihsien or from a point on the Tsin-pu line sixty li west of Yihsien to Kiaochow or some place on Kiaochow Bay. This line would go via Ichoufu city and would be an attempt on the part of China to gain some of the trade commanded by the German Railway running from Tsingtau to the interior.

"Second, a line from the same western terminal but going to Tsingkou, the main sea port of North Kiangsu, instead of to Kiaochow Bay.

"Third, a line from the coal field in a southeasterly direction to the proposed Hsuchoufu-Tsing-Kiangpu-Haichow road.

"Fourth, a line from the main line of the Tsinpu railway to the mines. This would be some thirty li in length. The point now under discussion is as to which company, the Tai-tsao or the Tsin-pu, shall reap the profits of its construction."

Light Railway for Malaya.—The government of the Federated Malay States proposes the construction of a light railway connecting Klang and Kuala Selangor.

The Canton-Kowloon (British Section).—Preparations are under way for the formal opening of this section, October 1. The iron frame work, axles and wheels for the passenger coaches, together with the structural steel for the work shops at Hunghom, arrived the latter part of August. The work of assembling the coaches at the Hongkong & Whampoa Docks is being expedited and in view of the fact that the bodies were completed awaiting the arrival of the materials, the coaches will be ready for the occasion. Sir Henry May and the Hon. W. Chatham, Director of Public Works, and party inspected this section on August 3.

Chinese Railway Program.—The Waiwupu is anxious to construct the Yunnan-Szechuan, the Szechuan-Tibet and the Yunnan-Kuangzi railways as soon as possible, and in view of the difficulty of securing local *capacity* for this purpose has recommended the arrangement for a foreign loan. The Ministry of Finance has expressed disapproval of this course and a conference was called the latter part of August to discuss the question. Taotai Lao Knokjui has been selected to survey these lines and submit estimates.

Excursions on the Peking-Kalgan.—Arrangements have been perfected by the directorate of this line to run daily excursions to Nankou Pass from Peking to give foreigners an opportunity to view the Pataling Summit and the tunnel at this point which is the most famous monument to modern railway engineering effort to the credit of Chinese initiative.

Tientsin-Pukow Supplies.—The tenders received for the large contract to supply the southern section of the Tientsin-Pukow Railway with rails, fishplates, dog spikes, and fishbolts were recently opened, and the contract has been awarded to Jardine, Matheson & Co., who quoted Russian rails manufactured by the De Provine Steel Rail Mills and fastenings made in Belgium at $30.22 per ton for rails; $40.05 for fishplates, $46.57 for dog spikes, and $46.57 for fishbolts. The nearest competitor was Siemssen & Co., a German firm, which quoted Shelton iron (British). The only tender for American material was sent in by the Mitsui Bussan Kaisha, a Japanese firm, and this company quoted Carnegie steel rails at $32.73 per ton. The call for tenders was advertised in November last and called for 7,100 tons 85-pound steel rails, 525 tons fishplates, 155 tons dog spikes, and 44 tons fishbolts.

Chinese Eastern Indemnity.—The Chinese government has remitted Tls. 160,000 to the Chinese Eastern Railway to cover claim for lumber stolen by the Hunghutze on the Yalu.

The Pyingyang-Chinnampo.—This railway was completed August 14 according to the *Seoul Press*. It is 34 miles in length and construction was begun September 14, 1909.

Transiberian Schedule Reduced.—Twelve hours between Harbin and Moscow have been saved by the new schedule, effective September 1. The distance is now covered in eight days and two hours.

F. M. S. Railways.—The aggregate net profits earned by the F. M. S. Railways from the opening of the first line in 1885 to the end of 1909 amounted to $19,641,814, equivalent to 42.63 per cent. of the capital outlay. Last year, the dividend earned was 3.18 per cent. on a capital of $46,066,565, or a net profit for the twelve months of $1,468,180 as compared with 3.49 per cent. in the previous year.

Purchasing Agent of the Tientsin-Pukow (Southern Section).—Mr. Y. C. Tong has announced his appointment as purchasing agent for this section.

Change of Japanese Railway Officials.—Mr. K. Fujiti, director of the Railway Board, has been appointed to succeed Mr. S. Uyemura who recently resigned his position as chief of the Kyushu Railway Superintendence Bureau.

Antung-Mukden Construction.—It is announced that the 53 miles section between Antung and Chikuanshan will be opened to traffic in November. The locomotives and cars are being assembled at Antung.

Manila Railroad Company.—Offers were invited last month for an issue of £411,516 Manila Railroad Company (Southern Lines) First Mortgage Four Per Cent. Gold Bonds, due May 1, 1939, the equivalent of $2,000,000. The bonds are secured by a first mortgage on the whole of lines and the equipment thereof. Messrs. Speyer Brothers and the Hongkong and Shanghai Banking Corporation offer the bonds for sale at 86, equal to £176 19*s.* per bond of £205 15*s.* 2*d.* The subscription list will be opened simultaneously in New York by Messrs. Speyer and Co., and in Washington by the Bureau of Insular Affairs, United States War Department. The Government of the Philippine Islands guarantees payment of 4 per cent. interest per annum on the face value of the above $2,000,000 bonds. Any payments made by the Government under its guarantee are to be repaid to it only at the maturity of the bonds, and the lien of the Government to secure such repayment is subject to the lien of the mortgage securing the bonds. A letter from Mr. Horace L. Higgins, president of the company, is incorporated in the prospectus, says the *London and China Express*. It states that of the Southern lines approximately 60 miles are open to traffic. "From the operating results so far obtained it is confidently anticipated that the net revenue for 1910, the first complete year of operation, will already be about sufficient to meet the annual interest on the $2,000,000 bonds now offered. The 470 miles constituting the Southern lines will traverse a highly productive agricultural country, reaching all the important towns of Southern Luzon." The bonds appear to be a fair security, and should be attractive at present rates.

Australian Transcontinental Line.—The engineer in charge of surveys in his preliminary report states that the line would be 1,063 miles long on a 4-foot-8½ inch gage, with the ruling grade of 1 in 80, and with a minimum curve of 20 chains. He estimates that the line would, with the necessary equipment, cost $19,381,680 to build.

Indian Railways.—A comparison of earnings for the year 1909, compared with 1908, follows:

"Gross earnings, $156,866,666, an increase of $22,400,000; net earnings, $68,930,000, an increase of $9,915,333. The percentage earnings on capital invested—mileage earning revenue—was 4.81 as compared with 4.33 in 1908. Passengers carried numbered 329,000,000, and passenger earnings $51,200,000, an increase of 8,000,000 passengers and of $1,066,660 in earnings. The freight moved was nearly 61,000,000 tons, and the freight earnings amounted to $93,733,833, a decrease of 1,500,000 tons, but an increase of $6,000,000.

Australian Government Railways.—The American Vice-Consul at Sydney offers the following information regarding these lines:

"In 1909 there were 1,580 miles of railway in Australia owned by private companies, of which 943 miles were for general traffic and 637 miles for special purposes. The capital cost of these private railways, with the exception of 283 miles for which statistics were not available, was estimated at $15,091,233. The gross earnings in 1908 amounted to $2,276,608, and the working expenses to $1,320,136; the trains covered 1,389,883 miles, and carried 920,000 passengers and 1,627,000 tons of freight. At the date covered by these figures there were 16,653 miles of government railways open for traffic in the Commonwealth."

Kalgan-Suryan Railway.—The Chinese authorities have decided to rush the construction of this line and also the Kalgan Urga in view of increased Russian activity on Chinese borders.

Movement of Japanese Railway Officials.—Mr. Y. Kinoshita, Traffic Manager, and Mr. J. Aoki, Councillor, the Imperial Government

Railways of Japan, are in St. Petersburg attending the Russo-Japanese Through Traffic Conference. Mr. R. Fukao, the representative of the Osaka Shosen Kaisha at the Conference, joined them at Harbin.

Mr. S. Tanaka, Director S. M. R. Co., has wired from Brussels that the Europe-Far East Through Traffic Conference was opened on the 28th July, Thursday.

AUSTRALIAN RAILWAY SUPPLIES.—The Lorain Steel Company, an American firm, has secured a contract for supplying steel rails and fish plates to the Victoria Government to the value of $500,000 gold. The Worthington Iron Steel Co., a British firm, secured the contract for the supply of $790,000, gold, worth of rails and steel plates from South Australia in competition with Russia and German firms.

THE TOKYO RAILWAY.—The period for the completion of this system under its charter expires this year and news has been received that an extension of five years has been granted. In all, when completed, the system will comprise 237 miles of track, but 123 of which have been constructed.

THE PAKNAM RAILWAY CO., LTD.—This company, which operates a single track line 14 miles in length connecting Paknam with Bangkok, paid a dividend of 9% for the half year ended June 30, 1910, and 10% for the previous term. The paid up capital is 500,000 ticals. It will be remembered that last year this company increased its capital from Ticals 400,000 to Ticals 500,000.

THE PHILIPPINE PANAY-CAPIZ LINE OPENED.—This line connecting Iloilo and Capiz was formally opened last month, the Secretary of War driving the last spike during his Southern Philippine trip. This line represents the largest construction work financed by American capital in the Far East. It will probably take another year to substitute iron and concrete structures for the present temporary wooden bridges. The Philippine Railway Hospital at Iloilo has entered into an agreement with the Philippine government whereby all government employees are admitted for treatment on the same basis as railway employees.

JAPANESE RAILWAY FERRY.—The Railway Board has ordered two steamers of 3,000 tons each for service between Shimonoseki and Fusan in anticipation of increased traffic with the opening of the Antung-Mukden line.

SUPPLY OF INDIAN RAILWAY MATERIAL.—According to *Railways*, Messrs. Ewing and Company, Calcutta, Agents for Messrs. McKerrow and Company, Limited, the proprietors of the Sheffield-Twinbarrow System, have got a further order from the North-Western State Railway for the supply of the underframes and other materials of this pattern for certain bogie rolling-stock required on the Kalka-Simla 2 feet 6 inch gauge mountain line, *viz.*, 2 composite 1st and 2nd class carriages, ten 3rd class carriages, 4 postal vans and 8 covered goods wagons with water tanks. The Consolidated Brake and Engineering Company, Limited, are supplying 500 sets of automatic vacuum brake fittings and riggings for rolling-stock to the East Indian Railway, delivery to be completed in England by May 1910. The Vacuum Brake Company, Limited, London, are supplying the South Indian Railway Company with alarm intercommunication apparatus between passengers and the train staff in carriage stock. Messrs. Brinjes and Goodwin, Limited, have supplied a paint grinding machine to the Burma Railways and the Morgan Crucible Company, Limited, 130 crucibles. Messrs. Alldays and Onions' Pneumatic Engineering Company, Limited, London, have supplied a dozen workshop vices and Messrs. P. and W. Maclellan, Limited, Glasgow, 400 cwts. of copper ingots. Messrs. Horsely and Company, Limited, have supplied 20 feet by 100 feet bridge girder spans. Messrs. Kelvin and James White have supplied a number of voltmeters to the Bengal-Nagpur Railway. The Glasgow Iron and Steel Company, Limited, have in hand a large order from the same Railway for the supply of steel boiler plates and buffer beams. Messrs. Wilford and Company, Limited, are supplying 1,000 laminated bearing springs for rolling-stock and Messrs. Turton Brothers and Matthew, Limited, spiral and volute springs. Messrs. Burn and Company, Howrah, have the order of the North-Western State Railway for the construction in their own workshops at Howrah of four hundred goods wagons. Of these 200 are to be ordinary wagons built to the North-Western Railway specification and the remaining 200 wagons are to be built on Sheffield-Twinbarrow underframes and ironwork. Messrs. Burn and Company have also recently put in hand orders for a large number of girders, municipal requisites, sheds, chimneys, firebars, etc. The Bombay, Baroda and Central India Railway Company are providing two additional new 3-ton steam travelling broad gauge cranes at their Colaba wharves in Bombay in order to facilitate the handling of the traffic. Messrs. Ransomes and Rapier, Limited, Waterside Ironworks, Ipswich, are supplying hand-accident cranes with engine lifts to the South Indian Railway Company. Messrs. Ewing and Company, Calcutta, agents in India for Messrs. McKerrow and Company, the licencees of Sheffield-Twinbarrow Coal Wagon, supplied one of these wagons *free* to the Bombay, Baroda and Central India Railway for a six months' experiment. The trial having proved satisfactory the Railway Company have now purchased the wagon outright. Messrs. Vickers, Sons and Maxim, Limited, Victoria Street, Westminster, had in hand an order for the supply of Rolling-stock Steel Tyres to the Bengal-Nagpur Railway; also Messrs. Thos. Firth and Sons, Limited, and Messrs. Steel, Peech and Tozer, Limited. Messrs. Jessop and Company, Calcutta, have supplied a 10-ton steam road-roller to the North-Western Railway for road-making in stationyards and at stations. The Lancashire Dynamo and Motor Company, Limited, are supplying a milking booster to the East Indian Railway; Messrs. Greenwood and Batley, Limited, Armsley Road, Leeds, are supplying the same Railway with some electrically driven high lift pumps, which will probably be shipped to Calcutta next June. The foot overbridge at Galsi station on the East Indian Railway for which Messrs. Burn and Company are providing the necessary iron, steel and woodwork, together with two trestles and staircases, main girders, bracings, etc., complete, is 79 feet 6 inches long and the contract includes the erection of the work at site. Messrs. Birkmyre Bros. have obtained an order to supply the East Indian Railway Company with 150 paulins, 25 feet by 14 feet, with eyelets and 16 rope lashings each complete. Messrs. Bengal Timber Trading Company, Limited, have supplied 1,000 cwts. of teak-wood squares to the Rohilkhand and Kumaon Railway. An installation of 50 H. P. motor was being substituted for the existing 10 H. P. motor in Bangalore Railway Workshops, the property of the Mysore Durbar, but worked by the Madras and Southern Mahratta Railway as part of the Mysore State line. The Gourepore (Oil) Company, Limited, have a contract for the supply of 14,000 gallons of boiled linseed oil and 700 gallons of raw linseed oil to the Bengal and North-Western Railway. The Vacuum Oil Company, Limited, Calcutta branch, have an order from the Bengal and North-Western Railway for the supply of 5,500 cwts. of axle oil for rolling stock, 350 cwts. of locomotive cylinder oil and 170 cwts. of dark marine cylinder oil. Standard Oil Company of New York are supplying 40,000 gallons of Snowflake kerosine oil 150 degrees test and 60,000 gallons of Chester kerosine oil, 125 degrees test, to the Bengal and North-Western Railway. Messrs. Balmer, Lawrie and Company, Limited, had an urgent order for the immediate supply of two thousand barrels of Portland cement. Messrs. Turner, Morrison and Company have received an order from the Bombay, Baroda and Central India Railway Company for the supply of 6,000 gallons of boiled linseed oil and 800 gallons of raw linseed oil to the Rajputana-Malwa State Railway. The Metropolitan Amalgamated Railway Carriage and Wagon Company, Limited, Saltley, Birmingham, are supplying the underframes and other iron work for a large quantity of vehicle stock to the Burma Railways Company, namely, 330 covered goods wagons and 150 large cattle wagons.

KAIFENG-HANCHOW RAILWAY.—Peking advices announce the appointment of Chao Wen piao as engineer-in-chief of the Haichow-Chinking section of this proposed line.

SIAMESE RAILWAY CONSTRUCTION.—The *Bangkok Times* announces that laying steel by hand is proceeding from Singora, Trang and Petchaburi on the Southern Line while awaiting the arrival of steel laying machines ordered.

MANCHURIA RAILWAY PROJECTS.—There is some controversy over the construction of the Tetsurei-Kailiang railway proposed by Chinese merchants and recently ordered surveyed by the Viceroy. The merchants of Kaigen have put forth a plan to substitute a line running between Kailiang and Kaigen a distance of 360 miles compared to 340 miles involved in the former line. They claim that the line to Kaigen could be built for Tls. 4,000,000 while the other route would cost Tls. 8,000,000.

CHINESE RAILWAY REVENUE.—The Chief of the Railway Department announces that of the ten railways under his department, including the Peking-Hankow, Peking-Mukden, Chengtung Taiyuan, Tao-Ching, Pienliang-Loyang, Pinghsiang-Hsiangtan, Peking-Kalgan, Shanghai-Nanking, Kowloon-Canton, and the West Mansolea. Only two lines, the Peking-Hankow and the Peking-Mukden realized profits last year.

The result of investigation shows the following losses for different lines: Shanghai-Nanking, $605,000; Chengting Taiyuan, $363,000; Toa-Ching, $60,500; Pienliang-Loyang, $363,000; Peking-Kalgan, $90,750; West Mansolea, $9,075.

The Pinghsiang line realizes a profit, and the receipts for the Peking-Mukden line last year were about $6,655,000, and the Peking-Hankow about $5,808,000. For these two lines, after deducting the expenses and interest, there is a net profit of $5,445,000, which, after making up the above deficiencies, leaves about $3,932,500. This amount will be devoted to the construction of additional railways.

THE ACKLEY RAILWAY BRAKE IN THE EAST.—As a result of the visit of Mr. Griffin S. Ackley to the East the Ackley Brake Company has established agencies in Japan, China, the Philippines, and Australia and the brake has been introduced by substantial orders.

The firm of Messrs. Sale & Frazer, Limited, has undertaken the exclusive agency for Japan, Korea and Manchuria and substantial orders have resulted. The Ackley Brake is now being extensively used in Japan.

The China General Engineering Co. of Shanghai has the exclusive agency for China and the Shanghai tramways are already utilizing the brake with general satisfaction.

The exclusive agency for Australasia has been placed with Messrs. R. E. Cameron & Co. of Sydney, Melbourne, and Wellington. The contract was closed by Mr. Charles M. Terry on the part of R. W. Cameron & Co. as resident partner of the Sydney office. Mr. D. Bryant is general manager of the Melbourne office. The first order from Australia included a consignment of 132.

The famous brake has invaded almost every country in the world. It has been in 23 countries and patents are pending in many others.

The following from the *Electric Railway Journal* is of interest:

"Griffin S. Ackley, formerly president and general manager of the National Brake Company, Inc., Buffalo, N. Y., retired from the management of that company on Jan. 1, 1910. He has old his entire holdings of stock, constituting a controlling interest, to a syndicate of capitalists Mr. Ackley organized the National Brake Company over six years ago and was its president and general manager until the date of his retirement. Under his able management the company built up a very large business with Peacock & Ackley adjustable brakes throughout the world. The Ackley adjustable brake was put on the market less than a year ago. It is Mr. Ackley's own invention, and has been patented

PHILIPPINE MINING NEWS

THE TUMBAGA MINE.—Attention has been called to a remarkable shipment to the Selby Lead and Smelting Works, San Francisco, of two and one-half tons of ore taken out of this mine situated in the Paracale District, which is estimated will run over $1,900 to the ton. This ore was developed in a four-inch stringer of calcite. During the development work which is still steadily progressing several small stringers of this character were met and the indications are that the main reef lies somewhere in that vicinity, each find proving wider than former ones.

NEW PARACALE MINING CO.—The Paracale Consolidated Mining Co. has been formed for the purpose of developing thirty placer claims in Paracale district which are reported to have shown satisfactory values on preliminary tests. The company is comprised principally of large number of owners who have consolidated their interests and it is proposed to place a sufficient number of shares on the market to carry out a program of development and operation.

THE GUAMA COMPANY.—The experts of the Philippine Exploration report favorably on the 52 placer claims comprising this group and it is expected that the control of the company will soon pass to the Philippine Exploration under the terms of an option held by it. The terms provided for the payment of ₱50,000 and to purchase for cash ₱275,000 worth of stock for which they would pay ₱300,000, the sum realized to be utilized in the purchase of machinery to develop the property.

The officers of the company are: D. M. Carman, president; Francisco Ortigas, vice-president; E. B. Soriano, treasurer; George Sellner, secretary. The officers and Mr. A. Burlingame Johnson are the directors.

Mr. Bridgman, the general manager of the Exploration, sailed for the United States the latter part of August accompanied by Mr. Kane for the purpose of securing machinery.

CLOSING OF GOVERNMENT COAL MINES.—After investigating the coal mining operations at Liguan, Batan, Secretary of War Dickinson ordered the mines closed for the reason that the cost of operating was not within appropriations available. He stated that until congress provided the necessary funds no further work would be done.

THE EAST BATAN COAL MINES.—This company has purchased the S. S. Yungsang for a collier to supply the product to the inter-island shipping trade. The price paid is said to be less than ₱100,000. This vessel has a carrying capacity of 29,000 tons.

RAGAY GULF TESTS.—The samples from tests of placer ground included in this company's property arrived last month and it is understood that they will run from 60 centavos to ₱1.20 a cubic yard. Prospecting of the copper and coal deposits is progressing. Engineer Yates is in charge of the investigation in the interests of the Ragay Gulf Exploration Co.

NUEVA ECIJA ACTIVITY.—The valley of the Cebu River is recognized as very desirable placer ground and for some years prospectors have been interested in testing out the best properties. This month the Cebu Valley Mining Company was launched with a capital of 500,000, 250,000 pesos of stock going to the owners for transfer of 192 hectares of ground and ₱100,000 offered at par. The prospectus directs attention to preliminary tests that in several instances ran over ₱4.00 a cubic yard and the promoters claim that in no instance did it fall under ₱2.00. These figures are based on the report of Chas. A. Powers, a mining engineer representing Boston capitalists. However, the promoters of this company while claiming these high values are basing their estimates on a return of ₱1.00 a yard and 20 centavos a yard for working charges. The directors of the company are F. W. Towle, T. B. Tolman, Juan Atayde, E. E. Elser, and J. B. Lewels, well known Manila businessmen.

The Dorr and Sprungli properties near Gapan have been undergoing an investigation by Mr. Powers and it is understood that, if tests prove satisfactory, Boston capitalists will invest.

Other properties are being tested and there seems to be unusual interest in this district during the last month.

ORANGE BLOSSOMS.—Judge Frank B. Ingersoll, one of the substantial pioneer mining men of the Philippines who is largely responsible for the wide interest now taken in Paracale, has joined the Benedicts. The charming bride was Miss Joshena Stone Mekeel, daughter of Mr. and Mrs. Mekeel of Santa Barbara, California. The marriage took place at the residence of the bride's uncle, Mr. E. F. Blaine, Seattle, on June 20, and their wedding trip included the return voyage to the islands. Judge and Mrs. Ingersoll are at home to their friends at their delightful residence, Santa Mesa Heights, Manila.

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in more than 20 countries. It has already been introduced on over 200 street railways, many of which are in Europe, where sales agencies have been established in London, Berlin, Brussels, Paris and Zurich. The National Brake Company has purchased from Mr. Ackley all the United States, Canadian and Mexican patents on the Ackley adjustable brake and will continue to have the exclusive right to sell these brakes on the North American Continent. Mr. Ackley in turn has acquired from the National Brake Company all of the export business and good will in the Peacock and Tiger brakes in addition to the Ackley brake. He is still the sole owner of the patents of the last-named brake for all countries except the United States, Canada and Mexico. He will, however, have the sole right to sell all of the different types named throughout the world outside of the North American countries noted under the name of the Ackley Brake Company. The new company's headquarters will be in the Hudson Terminal Buildings, New York City, and additional foreing agencies will be established by it in countries where the company has no representatives."

CONTRACTING NEWS

CONTRACTS AWARDED.—Municipality of Shanghai, Transformers, High Tension Switch Gear and Cables.—The *Gazette* publishes the acceptance of tenders as follows:

(i) Four 470 K. V. A. 2 to 3 phase step up Transformers:
The Allgemeine Elektricitats Gesellschaft.......£950 0 0
(ii) Extra High Tension Switchgear:
The British Westinghouse Co., Ltd.......£860 0 0
(iii) Extra High Tension Underground Mains and Feeder pillars:
The Lahmeyer Electrical Works. £4,010 1 2

The following further tenders were also received:—

(i) Transformers.

	£		
Burnand & Co.	960	0	0
Brush Elect. Mfg. Co.	1,072	0	0
Johnson and Phillips	1,091	0	0
Maschinenfabrik Oerlikon	1,108	0	0
The Lahmeyer Electrical Works	1,123	0	0
Swedish General Electric Co.	1,180	0	0
British Westinghouse Co.	1,252	0	0
Adnil Electrical Co.	1,312	0	0
Inniss and Riddle	1,312	0	0
British Electric Transformer Co.	1,332	10	0
J. Morrison	1,372	18	0
Drake and Gorham	1,398	10	0
Alioth Company	1,465	0	0
Siemens Bros. & Co.	1,645	0	0
Brown Boveri & Co.	1,549	0	0

(ii) Switchgear.

Johnson & Phillips	685	0	0
Ferranti, Ltd	686	8	0
Siemens Bros	840	0	0
Cowans, Ltd	854	0	0
Spagnoletti, Ltd	867	0	0
The Lahmeyer Electrical Works	879	0	0
Elec. Construction Co.	957	10	0
Drake & Gorham	957	10	0
British Thomson-Houston Co.	962	10	0
British Westinghouse Co.	981	0	0
A. E. G.	1,100	0	0
Crompton & Co.	1,129	15	0
Brown Boveri & Co.	1,154	0	0
Adnil Electrical Co.	1,206	4	0
General Electric Co.	1,236	0	0
Reyrolle & Co.	1,257	0	0
Maschinenfabrik Oerlikon	1,397	4	0

(iii) Underground Mains, etc.

Adnil Electrical Co.	4,186	18	6
Inniss & Riddle	4,186	18	6
Henley's Tel. Cable Works	4,270	7	2
British Insulated Co.	4,337	11	8
Johnson & Phillips	4,397	9	6
W. T. Glover & Co.	4,561	0	0
Drake & Gorham	4,578	19	0
General Electric Co.	4,590	19	0
Western Electrical Co.	4,677	18	4
Callender's Cable Co.	4,740	16	5
Siemens Bros. & Co.	4,965	0	0
Aubert Grenier & Co.	7,729	0	0

SUPPLY OF CEMENT.—The following tenders were accepted:

Ilbert & Co., "Dragon" Haiphong. 350 casks per mensem at Tls 3.20 per cask.

Hupeh Cement Works "Pagoda." 100 casks per mensem at Tls. 2.80 per cask.

Shewan, Tomes & Co., "Green Island." 100 casks per mensem at Tls. 3.50 per cask.

The remaining tenderers are as follows:
Chee Hsin Cement Co., Ltd., Tls. 3.38 per cask.
East Asiatic Co., Ltd., Tls. 3.44 per cask.
Mitsui Bussan Kaisha, Tls. 3.50 per cask.
Dodwell & Co., Ltd., Tls. 3.51 per cask.

BUREAU OF PUBLIC WORKS, MANILA.—Construction two storehouses, 105 meters by 45 meters each, one to be two storeys and of reinforced concrete. Tenders were:

The Atlantic, Gulf and Pacific Company, to construct the buildings in 18 months for the sum of ₱348,600; the Manila Construction Company, in 480 days for ₱385,775; M. B. Zarate in 500 days for ₱729,500; R. M. Loper in 450 days for ₱381,000; and the Manila Sawmill Company in 540 days for ₱596,000.

CHIEF QUARTERMASTER, MANILA.—Railway material No. 40 rails.—Awarded Messrs. H. R. Cooper & Co., ₱9,000. The other bidders were: Castle Bros.-Wolf and Sons, Derham Brothers, Mariano Uy Chaco, C. E. Helvie.

MANILA HOTEL.—Furniture.—Lowest bidder, The Cadwallader-Gibson Lumber Co., approximately ₱60,000.

BANGKOK PUBLIC WORKS.—Cement for Crown Prince's New Palace—5,000 casks—Awarded Messrs. E. C. Monod et Fils representing Haiphong Dragon brand.

PROPOSALS INVITED.—Philippine Public Works, Cebu Water Works.—Sealed bids will be received by the Director of Public Works until 11:00 a. m., November 15, 1910, and thereupon opened, for the furnishing of material for and the construction of Osmeña Water Works System for the Municipality of Cebu, Cebu, Philippine Islands.

The proposed works will consist of a circular reinforced concrete dam with intake appurtenances and valve chamber; a concrete spillway; a 4,000,000 gallon reservoir in excavation; a 14″ and 16″ main pipe line six and a half kilometers long; a distribution system 4″ to 14″ diameter pipe twenty-one (21) kilometers long; and the necessary gates, valves, valve boxes, fire hydrants, and appurtenances.

Specifications, general plans, and blank forms of proposal may be obtained at the office of the Director of Public Works, Manila, P. I., and from the office of the District Engineer, Cebu, P. I.

MUNICIPALITY OF SHANGHAI.—Paving Blocks.—The Council is prepared to receive tenders for the supply and delivery of 280,000 Australian Hardwood Street Paving Blocks.

Particulars and specification may be obtained upon application at the Public Works Department, Hankow Road, between the hours of 10 a. m. and 5 p. m.

Sealed tenders endorsed "Tender for Wood Blocks" will be received by the undersigned not later than noon on Friday, October 7, 1910.

ELECTRICAL SUPPLIES.—The Council is prepared to receive tenders for the supply and delivery of:—

12. Electric Heating and Cooking Appliances.
13. 10,700 Carbon Filament Lamps.
14. 15,000 Metallic Filament Lamps.

Conditions, specifications, forms of tender and all neçessary information may be obtained upon application to the Electrical Engineer, Mr. T. H. U. Aldridge, at the Electricity Works, 31 Fearon Road.

A charge of Tls. 10 will be made for each specification, which will be returned upon the receipt of a *bona fide* tender.

Sealed tenders will be received by the undersigned as follows:—

12. Marked "Tender for Heating and Cooking Appliances" not later than noon on Thursday, October 10,1910.

13. Marked "Tender for Carbon Filament Lamps" not later than noon on Thursday, October 20, 1910.

14. Marked "Tender for Metallic Filament Lamps" not later than noon on Thursday, October 20, 1910.

EXECUTIVE BUREAU, PHILIPPINE ISLANDS.—Franchise Water Supply and Electric Power System.—Sealed proposals addressed to the undersigned and plainly marked "Proposals for a franchise for the erection, construction, maintenance and operation in the municipality of Zamboanga, Moro Province, Philippine Islands, of an electric light, electric power, and water supply system" will be received at the office of the Executive Secretary of the Philippine Islands until eleven o'clock a. m., Monday, October third, nineteen hundred and ten, and then opened, for a franchise for the erection, construction, maintenance and operation in the municipality of Zamboanga, Moro Province, Philippine Islands, of an electric light, electric power, and water supply system as provided for in Act No. 1995 of the Philippine Commission, to which Act bidders are especially referred. Bidders must state their address, the percentage of the gross earnings they will pay in lieu of provincial and municipal taxes on the franchise or earnings thereof, which percentage shall not be less than one and one-half per centum of such gross earnings, and the highest rates they will charge to subscribers for use, services, and supplies thereunder, which rates shall be subject to approval by the Board of Rate Regulation created by Act No. 1779. Each bid must be accompanied by a certified check for Two thousand (₱2,000.00) Pesos, payable to the order of the Governor of the Moro Province, as a guarantee of good faith and that the successful bidder will accept the franchise by filing written acceptance thereof with the Secretary of Commerce and Police within ninety (90) days from the date of the award of this franchise. Written notice may be served upon such bidder by the Executive Secretary of the acceptance of his bid, by depositing same in a securely sealed wrapper in the Post Office, postage prepaid directed to such bidder at his said address. Should such successful bidder neglect or refuse to accept said franchise in the manner, within the time and after service of notice as aforesaid, said check and the sum of money named therein shall forthwith be and become forfeited to the municipality of Zamboanga, Moro Province, as and for liquidated damages caused to the said municipality by such neglect or refusal. The right is hereby expressly reserved to reject any and all bids, or to waive any defect or defects in any bid. The successful bidder will be required to pay the cost of this advertisement. Copies of said Act No. 1995 and all necessary information may be obtained from the Executive Secretary.

By authority of the Governor-General:

F. W. CARPENTER,
Executive Secretary for the Philippine Islands.

PHILIPPINE CARNIVAL ASSOCIATION.—Bids will be received for exclusive concessions on the grounds during the 1911 carnival covering any attraction or refreshment feature. They will be opened November 5. Address: Lieut. Frank Adams, 12th Infantry, U. S. A., Assistant Director, Manila, P. I.

NEW CANDLE FACTORIES FOR SHANGHAI

The making of candles has been reduced to an art, a science and degree of economy excelled by no other industry.

Candles are made of paraffin, a by-product of crude oil. In the modern factory there is absolutely no waste in making candles from paraffin, as for every 1,000 pounds of raw material which the candle maker receives he turns out 1,000 pounds of candles. The paraffin is received at the candle factory in cakes.

On the top floor these cakes are placed in tanks, where they are melted. In liquid form paraffin is thinner than water. The tanks are very large, some of them holding 5,000 gallons each. In these tanks the liquid is kept constantly moving to prevent its chilling. From here it is allowed to flow to the floor below, where it enters into the candle machine.

1,000 IN ONE LOT.

The candle machines proper are the most interesting of all the equipment and facilities and represent a great amount of inventive genius and accomplishment. Instead of moulding candles a few at a time, nearly 1,000 candles can be moulded on one large machine at one time.

At the bottom of the machine are bobbins which furnish wicks to the candles, each bobbin containing sixty yards of wick. Near the top of the machine are the moulds proper, and into these the wick is fed from the bobbins below, there being one bobbin for every mould. The moulds are arranged in a kind of iron box, and this box is connected with both cold water and steam pipes.

With the wicks in place in the moulds and the hot paraffin poured in, the cold water is ushered into the iron box and circulates about the outside of the moulds. When ready the candles are lifted out of the moulds all at once by a mechanical operation and up into a rack. The same movement of the candle machine which lifts the candles from the moulds also rewicks the moulds. In order to adequately cool the candles during certain seasons of the year it is necessary to use ice, and many tons of ice are often brought to the candle factory at a time.

Great skill is required on the part of the candlemaker in selecting the wick and in making the size and composition of the candle suitable to the wick with which it is to be used. Unlike the wicks of the old tallow candle, the modern ones consume themselves as the candle burns. This, of course, does away with the necessity of the old time snuffers. In order that a wick will thus consume itself as rapidly as it should it must be of a certain quality of cotton fibre, must be twisted or braided, and sometimes treated. Some wicks comprise only four threads, others as many as sixty.

When it is considered that there are several hundred different sizes of candles made of paraffin, and that every one of these must conform in size and composition to the size of the wick to be used, the necessity of skill is at once apparent.

MIXING THE COLORS.

In the making of colored candles another important feature of the industry enters. The mixing of the colors of the many shades and tints desired is done in a separate apartment and the raw material then fed into the machines from pails instead of from pipes leading from the vats on the upper floor.

The packing of finished candles is done by girls. The least defect, even such as a slight chip off some part of the candle or a slight soil, means that it will be thrown out. The girls who do this work become very proficient in it and do it with remarkable rapidity.

Candles form a large and valuable item in the imports of foreign goods into China, and competition has been keen amongst local agents. At one time the great British manufacturing firm of Price & Co. controlled the trade, but Continental manufacturers entered the field and have secured a large share of the business.

It is not surprising to hear that in order to hold this rapidly increasing and profitable trade, foreign manufacturers have decided to erect factories in Shanghai and with lower labor cost, place the goods on the market at a price defying European competition. It is reported that the British firm of Piece & Co. have purchased a large tract of land on Soochow Creek in the Markham Road district, on which they will erect one of the largest candle factories in the world, and the firm of L. Soyka has also closed the contract for another large factory to be erected in Pootung. A large German firm will also erect a factory in Pootung, making three new industrial establishments for Shanghai.

With the employment of modern machinery and the low labor wages of China, candles can be turned out in Shanghai at rates defying foreign competition, and as the demand for cheap illuminations throughout the Empire is enormous, the success of the new enterprises seems assured.

RUBBER FROM BANANA JUICE

Extensive experiments are being made in regard to the extraction of rubber from the juice of the banana plant. The original investigator was Mr. George C. Benson and the following excerpt on the subject is taken from *The Georgetown Daily Chronicle*, British Guiana:

"About two years ago, whilst experimenting with some banana juice, so as to find out how best to mordant it, a thick and pliable rubber was found to attach itself to the sides of the enamel dish which held the juice. The rubber was ultimately sent to England and to America, and it was found to be what is known as a synthetic rubber, and when compounded with other rubbers it appeared to have a distinct market value, by increasing both the weight and the value of the rubbers with which it was compounded. This fact is about to be put to the severest test, and numerous samples are to be sent to the best judges both in Europe and America.

Just what process is used or to what extent the alleged banana rubber may enter into competition with the real product should the experiments prove successful does not appear.

FAR EASTERN ENGINEERING, CONSTRUCTION, COMMERCIAL AND FINANCIAL NEWS

ELECTRIC RAILWAYS, LIGHT, POWER, TELEGRAPHS, TELEPHONES, MOTORS, AIRSHIPS, ETC.

PHILIPPINE LONG DISTANCE TELEPHONES.—Manager Noble of the Philippine Telephone and Telegraph Co. has completed arrangements to instal a long distance system including connections between Baguio, Batangas and Los Baños so that each of these points would be reached from Manila. After these extensions, representing an outlay of ₱300,000, it is the purpose of the company to connect Cebu, Iloilo and Zamboanga with the capital. In this connection it will be necessary to lay a submarine cable between those three points.

KOREAN CABLE CONNECTIONS.—A Tokyo dispatch is to the effect that the Japanese government has opened negotiations with the Great Northern Telegraph Co. for the purchase by the former of the cable across the Korean Channel.

AIRSHIPS FOR CHINA.—Prince Tsai Tao is greatly interested in aerial navigation and has proposed that a number of officers be sent to foreign countries to study methods.

NEW PORT ELECTRIC RAILWAY EXTENSIONS IN MANILA.—The plans for the lines that are to connect the new port with the Manila Electric Railway system are completed and approved, and, with the return of General Manager Graves from the United States, active operations on construction are expected. These extensions include a double track from Bagumbayan Drive to the Quartermaster's wharf with a loop involving the line of wharves and will serve for the transportation of passengers and freight. The line will pass the sites of the new hotel and of the new custom house.

OSAKA SHOSEN WIRELESS.—The installation of wireless on the coastwise steamers of this line has been decided upon as a result of the Tetsurei Maru disaster. Stations will be established at different points along the Korean coast. Application has also been made for permission to instal apparatus on the American line.

TOKYO ELECTRIC SUPPLY.—The Kinugawa Hydro-Electric Company has obtained a charter covering a period of 25 years to supply electric power to the Tokyo railway. The wires are to be placed underground.

PEKING TELEPHONES.—The telephone bureau has begun the work of installing the underground cables of the telephone lines as directed by the Board of Posts.

BRITISH IMPERIAL WIRELESS.—It has been estimated by British experts that twenty wireless stations and the expenditure of £1,000,000 would connect the different possessions of the British empire by wireless and inaugurate a penny a word service at a cost for maintenance of £1,200,000 a year.

The cost would of course be bourne in part by each of the different colonies. A few suggestions for the system follow:

Montreal to Sydney:—Montreal to Glace Bay; Glace Bay to Vancouver; Vancouver to Hongkong; Hongkong to Singapore; Singapore to Perth; Perth to Adelaide; Adelaide to Sydney.

England to Wellington, New Zealand:—England to Gibraltar; Gibraltar to Malta; Malta to Alexandria; Alexandria to Aden; Aden to Bombay; Bombay to Colombo; Colombo to Singapore; Singapore to Perth; Perth to Adelaide; Adelaide to Sydney; Sydney to Wellington (New Zealand).

England to China:—England to Gibraltar; Gibraltar to Malta; Malta to Alexandria; Alexandria to Aden; Aden to Bombay; Bombay to Colombo; Colombo to Singapore; Singapore to Hongkong.

England to Africa:—England to Gibraltar; Gibraltar to Aden; Aden to Mombasa; Mombasa to Durban; Durban to Cape Town. Alternatively—England to Bathurst; Bathurst to Sierra Leone; Sierra Leone to St. Helena; St. Helena to Cape Town.

AUSTRALIAN ELECTRIC TRAMWAYS.—The following from the American Consular reports shows the extent of electric railway operations for 1909:

State.	Miles.	Passengers carried.	Capital (cost).	Gross revenue.	Working expenses.
New South Wales	105	173,733,000	$18,255,185	$4,917,440	$3,829,728
Victoria	34	7,407,000	1,413,370	321,479	246,985
Queensland	31	29,782,000	......	934,437	......
Western Australia	47	13,136,000	4,707,234	691,004	446,012
Tasmania	9	2,677,000	431,110	130,194	75,087
Total	226	226,775,000	21,806,899	6,994,554	4,597,812

The number of employees is given as follows: New South Wales, 5,523; Victoria, 312; Queensland, 614; West Australia, 354; Tasmania, 105; total, 6,908.

JAPAN FIRST AIRSHIP.—The trial flight of the airship invented by Isaburo Yamada took place this month. Described, his airship measures 30 meters in length by 11 meters. The experiments conducted were made with a 14 h. p. motor and eleven miles an hour, carrying two men, resulted. The installation of a 30 h. p. motor is expected to bring the speed up to 32 miles. The invention represents ten years' application.

SHANGHAI ELECTRIC TRAILERS.—Four trailer cars especially designed for native traffic have been placed on this system. The bodies were constructed of teak in local Chinese shops and the cars assembled by the company. An adjustable panel regulates the central entrance to the car so that in opening it on one side it closes it on the opposite. The seats are placed around the inside of the car and may be dropped to accommodate freight traffic. These cars will be used on the lines connecting with the railway station.

FUJI-MINOBU TRAMWAY.—A company capitalized at yen 2,000,000 has been organized for the purpose of constructing a line from Gotemba to Minobu, approximately 30 miles.

MOTOR SERVICE IN THE F. M. S.—The use of the motor driven omnibus in the Federated Malay States as a feeder for the excellent railway system has been successfully operated for four years for the carrying of freight, express, passengers and mail, says the *Commercial Motor*. The first line was inaugurated in 1906 to connect the town of Tapah with the station at Tapah Road in Perak, a distance of eight miles. Two 18 h. p. single-decked G. W. Ry.—type Milnes-Daimler omnibuses—were utilized with capacity for 18 third class and five first class passengers. In 1907 the eight miles between the mining town Chendderi and the railway at Temoh were covered by three of the same type of motor vehicles.

In the same year a motor line was opened connecting Kuala Selangor with Klang on the Kuala Lumpur line, a distance of 28 miles. Omnibuses of 28-32 h. p. were substituted for 18 h. p. and the carrying capacity increased.

In the latter part of 1907 a motor service was established between Kuala Kabu in Selangor and Raub in Pahang, a distance of 44 miles, including 35 miles through the Semankok Pass covering an altitude of 2,700 feet, the grade being about one in thirty on either side of the watershed between Selangor and Pahang. Four 16 h. p. wagonettes for mail and three 30-40 h. p. cars for express and passengers are used.

Kuala Lipis, the capital of Pahang, was also connected with the railway by way of Raub, a distance of 39 miles where it connects with the Raub-Kuala Kubu line above referred to and one 18 h. p. car has been in service .

The mining town of Benton is also connected with the Raub-Kuala Kubu motor line at a point called Tranum, this feeder being 21 miles in length. The single car service of this line runs from Benton via Tranum to Raub daily. These lines placed the principal points in Pahang within 24 hours of Kuala Lumpur.

ANHUI TELEGRAPHS.—The sum of Tls. 28,000 has been appropriated from the provincial treasury for the installation of telegraph connections between Ning Kuo-fu and Hinchow-fu, a distance of 160 miles.

MALACCA TELEPHONE EXCHANGE.—The Straits Settlements Government has authorized the expenditure necessary to instal this desirable telephone system.

SHANGHAI PUBLIC LIGHTING.—The following quotations for public lighting, submitted by the Electrical Engineer, were approved recently by the Municipal Council:

	Per annum.
Flame Arcs on long brackets	Tls. 178
Flame Arcs on short brackets	Tls. 170
Enclosed Arcs on long brackets	Tls. 148
Enclosed Arcs on short brackets	Tls. 140
60 C. P. metallic filament lamps	Tls. 23
200 C. P. metallic filament lamps	Tls. 60
400 C. P. metallic filament lamps	Tls. 100

CHINA LIGHT AND POWER CO., LTD.—The total balance of $50,242.22 to the credit of profit and loss for the year was written off as depreciation. The cash on hand amounted to $165,828.43 which will be absorbed by cost of new plant at Kowloon. The directors expect increased earnings the current year.

SARAWAK WIRELESS—Rajah Brooke is now in England and proposes establishing a station there, if it be feasible, to make connections with Singapore.

PUBLIC WORKS, DOCKS, WHARVES, BUILDINGS, ETC.

WHANGPOO CONSERVANCY.—The total volume moved by the two dredgers from the Channel bank and the Astrea channel during the quarter ended June 30 reached 419,065 cubic yards. This was deposited against and above the closing dam, ship's channel and the bunding at Woosung.

F. M. S. PUBLIC WORKS.—The total expenditure on Public Works, including establishments, in 1909 amounted to $6,797,402, distributed as follows:—

Federal	$ 629,341
Perak	2,166,599
Selangor	2,052,426
Negri Sembilan	993,646
Pahang	955,390
Total	$6,797,402

The expenditure is less than in 1908 by $1,098,809, and less than the estimate by $1,985,334. Personal emoluments amounted to $464,855, the percentage of salaries to the total expenditure being 6.84.

The lengths of road open for traffic at the close of the year gives an increased mileage in metalled roads and bridle paths of 116 miles and 75 miles, respectively, with a decrease in unmetalled roads of 20 miles.

The quarantine station at Pulau Jerejak is being constructed on joint account by the Public Works Department of the Colony, and it is anticipated that it will be ready for occupation during the current year. The station is capable of sheltering some 3,000 to 4,000 persons.

Reclaimed Land at Tokyo.—The municipal authorities are now in possession of 59,000 square yards of land reclaimed at Toranomon, Kotohiracho and Nichi-saiwarcho which it is proposed to sell at yen 10 a yard or rent at one yen a yard per annum.

Philippine Irrigation.—The municipal presidentes have been directed to supply the chief irrigation engineer with full information respecting existing irrigation systems in his jurisdiction under the following heads:

(*a*) The name of the cabecilla.
(*b*) The names of the property owners.
(*c*) The area covered.
(*d*) The length of the main canal.
(*e*) The source of supply.
(*f*) The quantity of water claimed.
(*g*) The date of original appropriation.
(*h*) A statement as to continuity of appropriation.

The extensive irrigation program of the Philippine government includes three large projects under way covering approximately 18,000 hectares of lands. The Bued River project now under investigation covers large areas in Pangasinan and Union Provinces in northern Luzon, the Pototan project, the San Miguel and the Cordova Santa Barbara systems in Panay are under construction. Up to the present time ₱2,250,000 are available and an annual appropriation is provided until the end of 1912. The benefits of irrigation are being appreciated in Cavite where the land included in the Imus system returns 100 cavans of rice to one planted where the returns do not exceed 40 cavans outside the irrigated district.

Permanent Army Quarters in Philippines.—In the estimates prepared by the War Department for the year, provision has been made for the construction of reinforced concrete buildings for the housing of American troops.

Manila Harbor Improvements.—Collector McCoy has recommended the construction of two additional piers at the new port, a new custom house, a bridge across the Pasig at the foot of Calle Rosario, the occupation of space along the river banks by commercial firms, the dredging of the deep water section of the harbor to 35 feet and outside the Luneta Extension to 30 feet, the closing of the gap in the breakwater, the dredging of a new channel round the south and new immigration buildings.

China Mutual Expansion. — Secretary Hughes recently made the annnouncement that it was the purpose of the company to erect a large office building in Manila.

Irrigating Wells in Shantung.—As a result of an effort to combat the effects of a serious drought in this province in 1909, 3,560 wells were dug by the farmers and over 7,000 acres of land supplied with an abundance of water distributed by hand. An effort is now being made to supplant the rope windlass by windmills.

Irrigation in Victoria.—Consul Jewell of Melbourne gives the following information respecting this line of endeavor:

"The government has spent $33,500,000 on works to supply water for irrigation, domestic, and stock purposes. Of this, $12,500,000 has been expended on irrigation works, which command 1,100,000 acres, and which now supply water for 350,000 acres; but additional reservoirs will be needed before the remainder of the area can be fully irrigated. A complete water supply for irrigation is assumed to be water enough to cover the land to a depth of 2 feet each irrigation period, the water to be measured at the place of use. The surplus water is sufficient to irrigate 250,000 acres, and settlers are required to utilize it.

The most important irrigation work is the diversion of the water of the Goulburn River, which rises in the highest mountains, where the annual rainfall reaches 60 inches, and during about six months of the year carries an immense volume of water, of which a considerable part will have to be stored to provide for the remaining six months. There are two main channels of the Goulburn scheme which have an aggregate length of about 150 miles. The weir at the head of the channel is a masonry structure about 50 feet high, and cost about $500,000. The eastern channel, now complete, is about 30 miles long. The western main channel, nearing completion, is over 100 miles long, and carries 1,750 cubic feet a second; 12 miles from the head it empties into a reservoir, which holds 196,000 acre-feet, the entire storage under the system being about 220,000 acre-feet. Surveys have also been made for an additional reservoir, which will hold 850,000 acre-feet of water. At present about 50,000 acres are being irrigated, and there is water available for an additional 200,000 acres.

The State also has a series of works diverting water from the Murray River, the largest stream in Australia, and navigable during six months of the year for about 1,000 miles. When the river is at high level, water may be obtained by gravitation, but when it falls to "summer level," it has to be pumped, and the state pumping plants in operation are capable of lifting 575 cubic feet a second.

Port Arthur Water Supply.—Work on the new water supply to cost yen 50,000 was begun last month and is expected completed next June. The water is to be carried five miles from an intake at Takushan mouth of the city and will include a supply of 1,200 cubic meters daily.

Manila Hotel.—The corner stone of this institution was laid by Secretary of War Dickinson, September 2.

Haiphong Harbor Improvements.—The Haiphong Chamber of Commerce has been authorized to float a loan of 1,500,000 francs for the purpose of improving the harbor there. Tonnage dues are to be levied to meet the charges.

Yokohama Water Works.—The sum of yen 127,000 has been authorized expended for the installation of a new pump near the reservoir and other repairs.

Port Arthur Harbor.—The South Manchuria Railway Company will, in the near future, undertake the work of cutting a canal from the western harbour at Port Arthur to the open sea at an estimated cost of Y1,500,000.

Chinghai Naval Port.—The sum of yen 8,000,000 has been authorized expended in the development of a large naval station at this point covering ten years' activity.

SHIPBUILDING, GENERAL MARINE AND FISHERIES

The Hongkong and Whampoa Dock Company, Ltd.—The report of the directors for the half-year ended June 30th shows a total to the credit of profit and loss of $148,940.00, including $132,765.92 brought forward from previous account. During the six months the company completed 13 vessels consisting of steam launches, motor boats and lighters, also several marine boilers and a large number of forgings and castings. Under construction there were two steamers, four steam launches, two motor boats, sixteen railway cars and a large number of marine boilers, four of which are for the s. s. Heungshan. The work of extension of No. One Dock was completed, and is now sufficiently large to accommodate the largest vessel visiting Hongkong. The cost of this work amounted in all to $225,137.01. The total plant now stands at a valuation of $3,736,363 while the invoice value of stock and materials on hand is $881,151 and the amount expended on work underway at the end of the term amounted to $141,413.

New T. K. K. Steamer.—The new sister ship of the Tenyo and Chiyo now being built by the Mitsu Bishi Dockyards at Nagasaki will be named the Shunyo-Maru. She is expected completed next July.

P. & O. Fleet.—The steamers Maloja and Medina will be added to the fleet early next year. The dimensions follow:

Length, 550 feet; breadth 62 feet 6 inches; depth 39 feet 3 inches. It is calculated that with their 15,000 horse-power the average speed will probably be nearly nineteen knots an hour. Each of the new steamers will have accommodation for 462 first and 216 second saloon passengers.

New Yacht of H. I. H. Prince Tsai Hsun.—Last month the trial trip of this vessel built by the Kiangnan Dock and Engineering Company at Shanghai took place and an average of 13.5 knots was realized without effort and the vessel will do 14 knots or more. A brief description of the Lien-Chin follows: length between perpendiculars 150 feet, over all 173 feet, breadth moulded 25 feet, depth moulded 12 feet 6 inches, displacement 500 tons, with a mean draft of nine feet. She is equipped with two sets of triple expansion engines 10 in., 16 in. and 26.5 by 18 in. stroke. The power is supplied by two cylindrical boilers indicating 900 h. p. under 180 lbs. pressure. The accommodations on board are modern and include spacious quarters for the Prince and suite.

Motor Canoe for Malaya—The Shipping Gazette announces the construction by Thornycrafts of a steel canoe 63 feet in length with a moulded breadth of nine feet and a depth of two feet, ten inches, and drawing fourteen inches of water with a cargo of four tons, for survey service on the Pahang River. She will also be utilized for carrying mail, government stores and small bodies of troops. She will have a speed of 11 knots. Her hull is divided into six watertight bulkheads and she is fitted with a six cylinder paraffine engine with two screws on one shaft.

Eastern and Australian Steamship Company.—The directors' report shows that the profit amounts to £28,104. Depreciation has been written off to the extent of £12,650, leaving a credit balance of £15,454. From this has to be deducted the debit balance brought forward from last year of £4,820, leaving £10,634. The directors recommend that £10,000 be replaced to the underwriting account from which it was taken in 1907, carrying forward £634.

China and Manila Steamship Company.—The steamers Zafiro and Rubi of this line have been transferred to the American flag in order to participate in Philippine coastwise shipping trade.

Siamese Motor Fishing Boat.—A Siamo-Chinese owner of fishing stakes, says the *Bangkok Mail*, recently installed a 40-h. p. paraffine motor in a boat 45 feet in length, 13 foot beam and 6 feet in depth giving a speed of 9 knots. The hull was built in Tacheen.

Siam Steam Navigation Company.—The report fot the half year shows a net profit of Ticals 182,261.91 on a capital investment of Ticals 2,000,000. During the half year the s. s. Prachatipok was added to the Bangkok-Singapore line and the s. s. Krat put on the Chantaboon-Krat run. Electric light installations were completed on all the steamers. A dividend of 5% for the term was paid.

Shipbuilding in Japan—The *Japan Times* gives the following review of the activity in shipbuilding in the Empire:

The number of shipbuilding concerns and dockyards in this country at the end of last year was 239 and fifty-five respectively, showing the great progress of the country's shipbuilding industry compared with twenty-five years ago when there were only shipbuilding yards and thirty-four dockyards throughout the country. Of these concerns those receiving a shipbuilding encouragement bounty from the Government are the Mitsu Bishi Shipbuilding & Engine Works (Nagasaki), the Kawasaki Shipbuilding Yard (Kobe), the Osaka Iron Works and the Uraga Dock Company. The number of vessels built at these yards between 1896 and 1909 inclusive was ninety-five, their tonnage aggregating 273,624 tons. The vessels now building at those yards are as follows:

	Number of Vessels.	Tonnage.
Mitsu Bishi Shipbuilding Yard:—	8	24,150
Osaka Iron Works:—	3	2,860
Kawasaki Shipbuilding Yard:—	1	2,850
Uraga Dock Company:—	1 (dredger)	1,200

New Australian Battleship.—The following are the dimensions of the new battleship:

Length at the water-line, 530ft; beam, 78ft., with about 26ft. draught. The displacement of the vessel will be in the neighbourhood of 20,000 tons. The main armament will consist of, approximately, eight 12-in. guns (firing a projectile weighing 850lb., with a muzzle velocity of 3,000 ft. seconds). In addition there will be about 16 4-in. guns. Protection is afforded by a steel belt 7in. thick amidships, diminishing to 4 in. at the bow and the stern. The horsepower will be 64,000, and is supplied by twenty-two Babcock and Wilcox boilers. This will mean an hourly consumption of 30 tons of coal when going at full speed, or 720 tons for twenty-four hours, full speed, being twenty-six knots, approximately thirty miles per hour. An extensive and complete electric light plant will be installed, also complete equipment for wireless telegraphy and fire-control.

To Reconstruct Army Transport Thomas.—The contract to reconstruct this vessel has been let to the Moore and Scott Iron Works, Oakland. The expense of refitting will reach approximately half a million gold.

Kawasaki Dockyard, Dairen.—This branch of the Kawasaki Dockyard repaired 35 vessels in 1909, and this year up to the end of June had docked 23 vessels. These docks have a capacity to receive vessels of 3,000 tons.

The N. Y. K. and the Panama Route.—This company is preparing to inaugurate a line from Yokohama to New York in 1915 with the opening of the canal. It has also initiated a direct line connecting Yokohama and Shanghai with the Niagata Maru.

N. D. L. Liners May Call at Manila.—The managing director of the North German Lloyd recently paid a visit to Manila to look over the field with a view to make Manila a port of call.

General Manager Schwerin Visits Orient—The head of the Pacific Mail S. S. Company is expected at Manila early in October to look up his company's interests there.

China's Shipping Trade.—The total number of vessels entered and cleared from China's open ports during the year 1909 numbered 208,516 representing 86,771,800 tons as against 207,605 vessels in 1908 and a tonnage of 83,991,289.

Of the 208,000 odd vessels entering and clearing in 1909 there were 120,714 sailing vessels and 87,802 steamers, the latter's tonnage being 80,613,890 tons and the former's 6,157,919. Not taking junks into consideration China claimed most of the vessels participating, her figure being 34,038, Japan came next with 30,808 and then Britain with 27,699. But in tonnage Britain easily led—34,026,704 tons against the next nearest of 18,949,404, which is Japan's figure. Germany supplied 5,854 ships of 7,243,742 tons.

In tonnage of clearances British ships lead the way with 12,278,672 tons. China comes next with 7,094,482 tons and then Japan with 6,997,771 tons and Germany next with 2,344,273 tons. In the number of clearances China is easily top with 45,756, Japan next with 15,077, Britain next with 9,183 and Germany next with 2,041.

N. Y K. Reduces Rates.—This company has declared a reduction of rates on all its lines, but especially on the trans-Pacific run where the reduced rate from Manila to Seattle has been fixed at $150, or the same rate as previously applied to government employees. This is a reduction of $50 over the old rate of $200. The round trip fare has been fixed at $225 or a reduction of $75 over the old rate of $300 and equals the former rate from Seattle to Manila only.

The rate to London, Antwerp or Hamburg via Seattle and New York and thence across the Atlantic either by the White Star, Cunard, or North German Lloyd has been fixed at $300. and the rate from Manila to New York via Europe at $385. All these rates include first class N.Y.K. and first class Atlantic.

North German Lloyd Reduces Rates.—The Norddeutscher Lloyd is to reduce its rates for the voyage from Southampton to Australian harbours to 60 per cent. for first class and to 35 per cent. for second-class passengers, in addition to which a surtax of 10 per cent is to be paid. Hitherto £65 to £75 and £38 to £42 prevailed.

Earnshaw and Company.—This company has turned out of their shops a propeller for the s. s. Churruca ordered by Messrs. Ynchausti & Co., that weighs three tons and is 11.5 feet in diameter. This is the largest casting successfully turned out in the Philippines.

New Philippines Customs Cutter.—Plans and specifications have been prepared for the construction of a fast vessel to be used as revenue cutter in the Southern Islands. Its dimensions will be 110 feet in length, 17 foot beam and a depth of 7.75 feet. It is proposed to have this vessel develop 14 knots. As part of its equipment there will be a kerosene propelled launch twenty feet in length, fitted with a Remington motor and capable of 20 knots. The cutter will be provided with cold storage and electric light. A powerful search light will be installed forward. The engines are to be of the triple expansion condensing type.

Java-Bangkok Line.—The Royal Packet S. N. Co. has established connections between Bangkok and Java by inaugurating a monthly service which began early this month. The first steamer was chartered but as the trade increases the company proposes to put its own boats on.

New Straits Steamer.—The Straits Steamship Company has just ordered a new steel screw steamer from the Caledonian Shipbuilding and Engineering Company, Dundee, Scotland. The dimensions are: Length over all, 280 feet; breadth. 37 feet; moulded depth, 17 feet. She will be propelled by a single screw and will be capable, on average steaming, of 15½ knots an hour.

MINES, MINERALS AND THE METAL TRADE

The Wakamatsu Foundry.—Baron Nakamura, manager of this institution, has recommended that yen 35,000,000 be expended by the government in doubling the capacity of the plant which now turns out 150,000 tons of iron annually. The foundry originally represented an investment of yen 3,000,000 but up to the present time it has cost over yen 50,000,000, of which but yen 30,000,000 are represented by construction expenses the balance having been eaten up in losses. So far the imported iron, even after paying duty, sells, at a lower price than it can be manufactured for at the Wakamatsu foundry, so that it is believed by increasing the capacity the unit of cost will be reduced.

Fushun Coal.—This product is rapidly taking the place of firewood as fuel in and about Harbin, and the company expects to supply 20,000 tons there during the year. The rapidity with which the natives take to coal is largely due to the increase in the price of firewood noted in those sections. The coal people believe that this trade will increase to 40,000 tons annually by the end of next year.

The Goping Ltd.—The report of the directors of New Gopeng, Ltd., presented at the 7th annual meeting of shareholders held at Tabb Hotel, Redruth, on July 26, stated that the accounts show a profit of £10,892 19s. 2d. making with the balance brought forward £1,022 9s. 3d., a total of £11,915 8s. 5d., out of which dividends at the rate of 17½ per cent. (3s. 6d. per share) have been paid, leaving a balance in hand of £4,915 8s. 5d. The directors are pleased to report that the profits are much larger than for the preceding year.

Although the year's tin returns have been comparatively small, this has been more than compensated for by the large increase in the profit derived from rubber, and our policy for dealing with the property has been fully justified, in so far that excellent profits have been earned without further inroads having been made on the company's reserves of land. As stated elsewhere, it would not have been possible to deal with the low-lying land remaining upon the two old blocks without some economical form of elevation. This led to the installation of jet elevators, the complete success of which has demonstrated that they can economically be used on other parts of the company's property, and must be considered as opening out great possibilities for future working of this description, and although it is not possible to accurately forecast the result, there can be no doubt that this method of working will add considerably to the life, and consequent value, of your property.

The Tronoh Mines.—Pointing out to the shareholders, the lack of justification in rumors to the effect that these mines would be worked out this year, Secretary Swannel says:

"The board have just received from the general manager important information of further developments on the eastern lead, and he proposes to work this part of the property by the open-cast system. He reports that he has proved the ground by bore-holes, and the average value of the karang (or tin-bearing ground) was 42 catties; and he estimated the quantity at 65,000 cubic yards. According to the figures sent by the manager, the profit likely to be obtained from working this part of the property is estimated at $738,500 = about £86,150.

"In making the above estimate, the manager based the value of the karang at only 30 catties.

"The manager has since reported by cablegram that the borings made since sending his written report indicate a further extension of 100 feet, with an estimated quantity of 6,500 cubic yards of karangs of the value of 15 catties.

"The above ground is distinct from the portion of the property on which the present workings are carried on."

Oil in Saghalien.—The report of the experts of the China Oil Co. sent to North Saghalien to investigate the oil deposits is most favorable. The Beatassin oil fields near Chaiwo showed oil free from benzine and 50 % kerosene. This will obviate the suspension of activities during the winter as this kind of oil does not freeze. The Nutowo district also won favorable comment. This region covers about 40 square miles and is featured by innumerable lakes covered with pitch. To offset the natural attractions labor is scarce and the closing of the harbor during the winter interferes with transportation.

Coal in Saghalien.—The Russian Government is greatly interested in the development of the coal measures by providing that leases may be granted for a period of 36 years under competitive tender to private companies under contract to take out not less than 10,000 tons annually for the first three years and double that amount annually thereafter.

Peking Syndicate Prospects.—The working of the iron ore deposits covered by this company's concession. The Chinese government has been asked for a special permit to instal blast furnaces and other equipment necessary to complete a modern steel manufacturing plant. The adaptability of the coal available for smelting purposes controlled by the company should aid in the economical manufacture of steel the demand for which is increasing annually throughout the empire.

Japan's Mineral Output.—The following table shows the returns for the first five months of the year 1910:

Gold, 45,600 ounces; Silver, 1,930,000 ounces; Copper, 17,000 tons; Sulphur, 15,000 tons; Coal, 5,547,258 tons; Kerosene, 2,500,000 gallons; Iron, 341,820 tons.

New Manager of Raub.—Manager William J. Oates of the Raub has resigned and has been succeeded by Mr. Frank Williams, late manager of the Grenville United Mines, according to the *Malay Mail.*

New Gopeng Report.—The Company's issued capital is £40,000, and the profit for the year ending April 30th was £10,892. The dividends paid in 1909 were 6d. and 9d. per share respectively, and, in 1910, 1s. and 1s. 3d. respectively, or 3s. 6d. per share, absorbing £7,000.

Green Island Cement.—An interim dividend of 15 cents per share has been declared.

Burma Mines Ltd.—During July the furnaces were in blast for 1677 hours during which time a total tonnage of 6195 tons were smelted, made up as follows:

Bawdwin slag and ores	3227	tons
Fluxing Ores, Drosses, &c	2687	"
Purchased Ores	281	"
Total	6195	tons

The tonnage of Coke used amounted to 837 tons.

The lead produced amounted to 1357 tons containing approximately 8862 ozs. of silver.

The lead shipped from Rangoon to London during July amounted to 1291 tons containing approximately 8360 ozs. of silver. Besides the above shipments about 100 tons were sold locally for shipment to China and Japan.

Gold Strike in Japan.—The *Japan Herald* reports the discovery of a gold reef situated at a height of 3,000-ft. on a mountain at Araigori in that prefecture. Mr. Tezuka obtained the rights for conducting experimental work over an area of 230,000 *tsubo* last year. Subsequently, however, he found six exposed reefs and asked for permission to work 620,000 *tsubo*. On June 21, the Mine Controlling Office sent a few officials who continued their investigations till the 15th ultimo, as a result of which a large vein of gold reef extending over a mile with a thickness of 120 feet was found. According to analysis the ore averages from 2⅙-oz. to 2½-oz. to the ton.

Pulo Laut Coal.—The report for 1909 of this Dutch East Company places the output for the year at 119,000 tons against 98,000 tons in 1908. Of this 56,000 tons were exported and 161 vessels were bunkered at Stagen, the coaling port.

Belat Tin Mining Co.—This company's profits for the year amounted to $99,460, an increase over the previous term of $58,898 besides acquiring 26 acres additional tin land. A final dividend of 20%, making 30% for the year, was declared.

Burang Tin Mine.—The directors' report shows a profit of $20,000 for the year which was recommended disposed of as follows:

(1) That preliminary expenses be written off absorbing $6,420.02. (2) That the balance thereafter remaining be written off cost of pipe line $13,594.12.

Kuala Lumpur Engineering Works Ltd.—The above named syndicate has been organized with a capital of $250,000 to take over three local establishments.

Korean Mining.—The mining products of Korea for 1909 were 3,845,568 *yen* of gold, 548,355, *yen* of gold dust, 4,096 *yen* of silver, 42,835 *yen* of gold and silver mincrals, 2,727 *yen* of copper mineral, 327,613 *yen* of iron, and 225,865 *yen* of coal, making a total of 4,997,059 *yen*. The Seoul Press states that the provinces in North Korea are rich in minerals. More than ten mines for gold, copper and mica have lately been discovered in the provinces. The coal mining undertaken by Japanese is being very prosperously carried on and the coal is very good for fuel. Timber necessary for construction of houses is mostly supplied by the Nisshin Company which has sawing machines erected on a grand scale. The agricultural products consist of beans and hemp while the coast is crowded with various kinds of marine products. Chiksan gold mine in North Chhun Chhyong, Korea, about fifty miles southward of Seoul, is being worked by Baron Shibusawa and a few American capitalists who are the owners of the mine. Recently one of the American investors, Mr. Andersen, came to Korea for the purpose of investigating the condition of the gold veins and, should the result of investigation prove satisfactory, to work the mine on a larger scale forming a joint stock company of Japanese and American capitalists. A provisionary contract for the said project has been signed between Baron Shibusawa and the American capitalists.

FINANCIAL, COMMERCIAL AND MISCELLANEOUS

Commercial Bank at Peking.—The members of the Board of Finance are greatly interested in the establishment of a bank at the capital and have asked local bankers assistance.

Government Control of Imported Meat.—The Philippine Bureau of Supply has been authorized to assume control of the handling of meat from shipside until it is placed on sale in the markets through the cold stores.

Hongkong and Shanghai Banking Corporation.—The statement of the directors for the half-year ended June 30 follows:

"The net profits for that period, including $2,028,987.94, balance brought forward from last amount, after paying all charges, deducting interest paid and due, making provision for bad and doubtful accounts, amount to $5,389,127.67.

"The Directors recommend the transfer of $500,000 from the Profit and Loss Account to credit of the Silver Reserve Fund, which Fund will then stand at $16,000,000.

"They also recommend writing off Bank Premises Account the sum of $150,000.

"After making these Transfers and deducting Remuneration to Directors there remains for appropriation $4,724,127.67, out of which the Directors recommend the payment of a Dividend of two pounds sterling per share, viz.: £240,000 which at 1-9⅜, the rate of the day, will absorb $2,694,736.84.

"The balance $2,029,390.83 to be carried to New Profit and Loss Account.

"Owing to the redemption of the national war loan a rearrangement of the securities held in the account became necessary, and £270,000 3% Exchequer Bonds due 1915 were purchased, which stand in the books at 98. The opportunity was taken to adjust our holding of Consols to 80 and to write down other sterling securities.

"The expenditure incurred in effecting these changes, viz: £7,170, has been met of the profits of the half-year."

At the meeting held August 20, the chairman referring to the recent crisis in Shanghai said:

"Although at the outset I proposed to confine my remarks to the accounts, there is one matter outside these which, I think, calls for brief comment, I refer to the recent crisis in the native money market in Shanghai, caused by the failures of several native banks at that port. Energetic action was at once taken by the Chinese authorities, the Native Bankers' Guild and the Chinese Chamber of Commerce. The aid of the Foreign banks was sought and negotiations resulted in their making a loan of Tls. 35 lacs, issued under Imperial Edict, to the Taotai of Shanghai for the assistance of the native money market. The relief thus afforded had a very good effect and, although business is still restricted, it is hoped that a gradual return of confidence will soon enable native banks to resume the granting of reasonable trade facilities."

Branches were opened at Johore and Ipoh in Malaysia during the term.

Bank of Japan.—The following accounts were submitted and approved and the distribution of profits authorized for the half year:

	Yen.
Profits	3,292,829
Dividend on old shares (6 per cent. per annum)	900,000
Dividend on new shares (6 per cent. per annum)	121,500
Balance	2,272,329
To reserves	210,000
Bonus to officials and society expenses	206,000
Second dividend on old shares (6 per cent. per annum)	900,000
Second dividend on new shares (6 per cent, per annum)	121,500
Carried forward to next term	834,829

Hongkong Finances.—The total revenue of the colony of Hongkong during 1909 was $6,822,967, $718,760 more than 1908 and $113,971 more than the estimates. Expenditure, inclusive of public works extraordinary, was $6,542,839, or $1,386,639 less than the total expenditure of 1908, and less than the estimate by $238,327. The total surplus over the estimates was $280,128, instead of an anticipated deficit of $72,170. These figures exclude a reimbursement of $354,065 from railway account. A contribution of $1,226,441 was made towards the cost of the maintenance of militaty forces, including barrack services and defence works.

Grand Hotel, Ltd.—The directors submitted the following report for the half year ended June 30:

The net profit for the half-year after providing for general expenses, Directors' and Auditors' fees, and bad and doubtful debts, amounts to 40,613.74 *yen*, which it is proposed to apply as follows:

	Yen.
In payment of a Dividend of *yen* 5.00 per share for the half year	25,000.00
Written off New Buildings Account	2,500.00
Written off Furniture Account	3,257.23
Set aside for Furniture and Improvements	4,000.00
Carried to Reserve Fund	5,000.00
Carried forward to next Account	756.51

Yokohama Engine & Ironworks.—The report for the year showed a profit of yen 39,956 which was carried forward.

Floating Drug Store in Malaysia.—According to Consul-General James T. DuBois, of Singapore, the sale of Western medicines in the Malay Peninsula should find impetus under the new system of distribution. A dispensary boat—an ordinary house boat, with a crew to pole upstream and paddle downstream—will be equipped with Western medicines and cruise on the Pahang River in charge of a Malay "dresser." It will also facilitate the free distribution of quinine to the natives, which work has hitherto been accomplished through the agency of police stations and vernacular school teachers.

China's New Coinage.—To assist in the circulation of the new coins 3,000,000 dollar pieces already available at the Tientsin mint will be used to pay off troops in October.

Japan's Trade Increase.—The exports for the first half of the present year amounted to yen 211,201,360, an increase of yen 24,201,065 over the values for the corresponding period, 1909, while the imports amounted to yen 239,944,793, an increase of yen 25,426,818 for the term.—The total balance in Japan's favor for this period amounted to yen 28,743,433 an increase of yen 1,225,753. In all the increase in foreign trade for the term amounted to yen 49,627,883.

New Manila Shoe Factory.—The U. S. Shoe Co. of Manila moved into their new three storey reinforced concrete building this month and will soon be prepared to turn out 600 pairs of shoes daily, double the former capacity of the factory. The company is capitalized at ₱500,000 and President McGrath has been responsible for the development of the industry from a small cobbler's shops during the last eleven years.

Manila's Finances.—The total collections for the fiscal year just closed were ₱2,975,103.68 as compared with ₱2,765,851.18 for the preceding year. The increase in the twenty-three departments was ₱212,955.25, while the decrease in nine departments was ₱3,703.75, making a net gain for the past fiscal year of ₱209,252.50 over the collections for the preceding year.

The collections for land tax for the year just closed were ₱1,291,129.62 as against ₱1,261,236.45 for the preceding year, a gain for the year of ₱29,893.17. The franchise tax collected for the year was ₱53,783.42, a gain of ₱3,766.25.

Other principal departments that show a gain are: Internal Revenue licenses and cedulas, the collections in this department for the year being ₱112,097.85; water rents, collections for the year, ₱274,976.35, a gain over the preceding year of ₱23,250.81; sales of city property, collections ₱41,918.79, a gain over the preceding year of ₱26,376.86; road and bridge cedulas, collections, ₱81,158.00; a gain of ₱23,248.00; municipal court fees, collections, ₱93,614.95, a gain of ₱26,607.12; market fees collections, ₱278,736.85, a gain of ₱15,971.35; building permits collections, ₱17,524.01, a gain of ₱1,492.85.

FAR EASTERN STOCKS AND QUOTATIONS

Courtesy of Messrs. Kadoorie & Co., Hongkong, September 2, 1910.

STOCK.	WHEN ESTABLISHED	CAPITAL	NO. OF SHARES	VALUE	PAID UP	RESERVE	AT WORKING ACCOUNT	DATE	LAST DIVIDEND.	Approximate Yield per cent per annum at Present Quotation	CLOSING QUOTATIONS
BANKS.											
Hongkong & Shanghai Banking Corporation	1865	$15,000,000	120,000	$125	$125	g £1,500,000 s $16,000,000 i $250,000	$2,029,390	31-12-09	£2. for first half year ending 30-6-10, @ ex 1|9⅜ = $22.456	5%	930 buyers £88
National Bank of China, Ld.	1891	£699,475	10) 99,925	£7	£6	c £4,099 $400,000	$34,167	31-12-09	$2 (London 3|6) for 1903	....	$76 buyers
MARINE INSURANCES.											
Canton Insurance Office, Ld.	1881	$2,500,000	10,000	$250	$50	$1,560,000 j $254,583 u $302,799	Nil.	31-12-08	$10 for 1908	6%	$172½ buyers
North China Insurance Co., Ld.	1903	£150,000	10,000	£15	£5	g £125,000 s Tls. 225,000 u Tls. 335,253 f Tls. 146,586	Tls. 207,572	30-6-09	Final of 7|6 making 15|- for 1908.	5%	Tls. 115 buyers
Union Ins. Society of Canton, Ld.	1867	$3,100,000	12,400	$250	$100	s $3,000,000 g £90,000 f $287,984 j $1,449,735 u $713,985	$287,984	31-12-09	Final of $20 per share, making in all $50 per share for 1908, and an int. div. of $30 per share for 1909	6%	$835 sellers
Yangtsze Ins. Association, Ld.	1889	$1,200,000	12,000	$100	$60	$1,000,000 j $294,405 $199,234	$707,637	31-12-08	$12 for year ending 31-12-08 and interim of $3 on account of 1909	7	$200 sellers
FIRE INSURANCES.											
China Fire Ins. Co., Ld.	1870	$2,000,000	20,000	$100	$20	$1,000,000 x $550,348 f $61,168	$438,406	31-12-09	$6 and bonus $2 for 1908	7%	$112½ sales
Hongkong Fire Ins. Co., Ld.	1868	$2,000,000	8,000	$250	$50	$1,460,000	$426,218	31-12-09	$27 for 1908	8%	$342½ buyers
SHIPPING.											
China & Manila Steamship Co., Ld.	1882	$750,000	1) 30,000	$25	$25	i $57,734	Dr $3,777	31-12-09	$4% for 1906	....	$11 sellers
Douglas Steamship Co., Ld.	1883	$1,000,000	20,000	$50	$50	$230,000 i $100,589	Nil.	30-6-09	$2½ for year ending 30-6-1908	....	$27 sellers
Hongkong, Canton & Macao Steamboat Co., Ld.	1865	$1,200,000	80,000	$15	$15	e $250,000 d. i. $627,500 f $78,765 $ 15,491	$18,026	31-12-09	Dividend of $1½ for 30.6.1910	8%	$33 sellers
Indo-China Steam Navigation Co., Ld. (Preferred) Do. Do. (Deferred)	1882	m £600,000	2) 60,000 2) 60,000	£5	£5	i £138,100	£7,537	31-12-09	No dividend paid for last two yrs.	....	$60 sellers
"Shell" Transport & Trading Co., Ld.	1898	£ 2,000,000	2,000,000	£1	£1	i £720,000 £100,000	£192,994	31-12-08	3rd interim of 2/- per share (coupon No. 12) making in all 4|- for 1908, and interim of 1|- for account 1909	5%	88|- £11 buyers
"Star" Ferry Co., Ld.	1898 1900	$200,000	10,000 10,000	$10 $10	$10 $5	i $71,850 $62,681	$1,159	30-4-10	A dividend of 7% and bonus of 5% making 12% for year ending 30.4.1901	5 5%	$24 sellers $12 sellers
REFINERIES.											
China Sugar Refining Co., Ld.	1878	$2,000,000	20,000	$100	$100	e $520,000 r $83,620	Dr. $8,090	31-12-09	$10 per share for 1909	6%	$160 sellers ex div.
Luzon Sugar Refining Co., Ld.	1882	$700,000	7,000	$100	$100	none	Dr. $101,851	31-12-09	$3 for 1897	....	$26 sellers
Perak Sugar Cultivation Co., Ld.	—	Tls. 350,000	7,000	Tls. 50	Tls. 50	Tls. 100,000	Tls. 6,302	31-3-09	Tls. 10 for year ending 31-8-09	....	Tls. 800 sellers
MINING.											
Chinese Engineering & Mining Co., Ld.	1901	£1,000,000	1,000,000	£1	£1	d £215,000 h £12,289	£1,435	28-2-09	Interim of 1|6 for 1910 (coupon 14)	9%	Tls. 16
Headwaters Mining Co.	1908	₱600,000	28) 600,000	₱10	₱10				First year		₱10 buyers
Raub Australian Gold Mining Co., Ld	1892	£200,000	150,000 50,000	£1 £1	18-10 £1	£4,873	Dr.	..	1|2 per share, 13th div.	5%	$7½
Oriental Consolidated Mining Co. Ld.	....	g $5,000,000	500,000	g $10	$10	none	....	..	Final of gold $0.65 for 1909 in all g $15	..	41|-
DOCKS, WHARVES AND GODOWNS.											
Fenwick (Geo.), & Co., Ld.	1889	$450,000	z 18,000	$25	$25	$25,275	Dr $8,460	31-12-09	$1⅞ for year ending 31-12-06	....	$10
Hongkong & Kowloon Wharf & Godown Co., Ld.	1886	$3,000.000	60,000	$50	$50	$550,000 t $31,993 s $40,000	$264,847	31-12-09	$2½ for 1909	4½%	$54 sales
Hongkong & Whampoa Dock Co., Ld.	1866	$2,500,000	50,000	$50	$50	i $88,214 v $221,000	$132,765	31-12-09	No dividend paid this year	..	$50½ sales
Shanghai Dock & Engin'g Co., Ld.	1906	Tls. 5,570,000	13) 55,700	Tls. 100	Tls. 100	Tls. 1,000,000	Tls. 6,261	30-4-09	Final of Tls. 3½ making Tls. 6 in all for 1909	6¼	Tls. 76
Shanghai & Hongkew Wharf Co., Ld.	1902	Tls. 3,600,000	36,000	Tls. 100	Tls. 100	b Tls. 697,257 r Tls. 50,000 e Tls. 125,000	Tls. 9,222	31-12-09	Interim of Tls. 3 for 1910	7	Tls. 113 ex div.
LANDS, HOTELS AND BUILDINGS.											
Anglo-French Land Investment Co., Ld.	1906	Tls. 2,500,000	3) 25,000	Tls. 100	Tls. 100	Tls. 35,000	Tls. 4,314	29-2-09	Tls. 6 for year ending 29-2-10	5¾	Tls. 97 sellers
Central Stores, Ld.	....	$751,845	16) 50,123	$15	$15	n. $1,000	$1,000	31-12-08	8% for 1909	....	$16 buyers
Hongkong Hotel Co., Ld.	1866	$600,000 $400,000	12,000 8,000	$50 $50	$50 $25	$648,975 r $10,000	$1,277	31-12-09	$2.60 on old shares, $1.30 on new shares, for ½ year ending 31-12-09	....	$104 sellers $82 sellers
Hongkong Land Investment & Agency Co., Ld.	1889	$5,000,000	50,000	$100	$100	e $250,000	$27,971	31-12-09	Interim of 3½ for 1910	6¼	$101 buyers
Humphreys' Estate & Finance Co., Ld.	1887	$1,500,000	150,000	$10	$10	i $226,945 20) $25,856	$5,471	31-12-09	45 cents for 1909	5¾%	$8 sales
Kowloon Land & Bldg. Co., Ld.	1889	$300,000	6,000	$50	$30	none	$269	31-12-09	$2½ for 1909	8½%	$32 buyers
Shanghai Land Investment Co., Ld.	1888	Tls. 3,900,000	78,000	Tls. 50	Tls. 50	Tls. 1,523,045 e Tls. 300,000	Tls. 63,969	31-12-09	Interim of Tls. 3 for 1910	6¾	Tls. 112
West Point Bldg. Co., Ld.	1889	$625,000	12,500	$50	$50	none	$1,958	31-10-09	Interim of $1.80 for 1910	8¾	$39
COTTON MILLS.											
Ewo Cotton Spinning & Weaving Co., Ld.	1895	Tls. 1,000,000	5) 20,000	Tls. 50	Tls. 50	Tls. 250,000 e 20,000	Tls. 10,991	31-10-09	Tls. 11 for year ended 31-10-09	8½	Tls. 110
Hongkong Cotton Spinning, Weaving & Dyeing Co., Ld.	1901	$1,250,000	125,000	$10	$10	Tls. $175,000	$26,297	30-7-09	50 cents for year ending 31-7-08	8%	$5

FAR EASTERN STOCKS AND QUOTATIONS—(CONTINUED.)

STOCK.	WHEN ESTABLISHED	CAPITAL.	NO. OF SHARES.	VALUE.	PAID UP.	RESERVE	AT WORKING ACCOUNT.	DATE.	LAST DIVIDEND.	Approximate Yield per cent. per annum at Present Quotation.	CLOSING QUOTATIONS
International Cotton Manufacturing Co., Ld.	1895	Tls. 750,000	6) 10,000	Tls. 75	Tls. 75	Tls. 175,000	Tls. 8,372	30-9-09	Tls. 7½ for year end. 30-9-09 (10%)	12%	Tls. 62
Laou-kung-mow Cotton Spinning & Weaving Co., Ld.	1895	Tls. 800,000	8,000	Tls. 100	Tls. 100	none	Tls. 4,829	31-12-08	Tls. 6 for 1909	%	Tls. 60
Soy Chee Cotton Spinning Co., Ld	1895	Tls. 1,000,000	2,000	Tls. 500	Tls. 500	f Tls. 31,173	Tls. 31,173		Tls. 25 for 1909	10%	Tls. 240
MISCELLANEOUS											
Bell's Asbestos Eastern Agency, Ld.	1895	£5,377.10s.	11) 8,604	12/6	12/6	£1,500	£682	31-12-08	15% for 1908		$8 sellers
China-Borneo Co., Ld.	1903	$720,000	8) 60,000	$12	$12	$40,000	Nil.	31-12-08	5% for 1909	6%	$8½ buyers
China Light & Power Co., Ld. Do. do. Special Shares	1901 1907	$300,000	50,000 17) 50,000	$5 $1	$5 $1	none	$46,483	31-7-09	60 cents for year ending 28-2-06		$140
China Provident Loan & Mortgage Co., Ld.	1898	a $1,250,000	7) 125,000	$10	$10	$100,000	$2,602	31-12-09	80 cents for 1909	9%	$8 buyers
Dairy Farm Co., Ld.	1896	$300,000	40,000	$7½	$6	l $10,000 $10,000	$1,850	31-7-09	$1.20 for year ending 31-7-09	6½%	$19½ sales
Green Island Cement Co., Ld.	1897	$4,000,000	400,000	$10	$10	$14,000	$4,290	31-12-09	Final of 40 cts. making in all 75 cts. per share for 1909	10	$5
H. Price & Co., Ld	1907	$120,000	19) 15,000	$10	$10	none	$1,923.87	31-12-09	14% viz $1.40 for 1909	12%	$12 buyers
Hongkong Electric Co., Ld.	1889	$600,000	60,000	$10	$10	none	$11,798	28-2-10	A dividend of $1.20 per share and a bonus of 10 cents	6	$20 buyers
Hongkong Ice Co., Ld.	1881	$125,000	5,000	$25	$25	k $150,000	$12,662	31-12-09	Final of $8 per share making in all $10 1909	6	$135 buyers
Hongkong Rope Manufacturing Co., Ld.	1883	$600,000	$60,000	$10	$10	$40,000	$9,176	31-12-09	Interim of $1 for 1910	9	$21
Maatschappij tot Mijn-, Boschen Landbouwexploitatie in Langkat	1902	Gs. 2,500,000	25,000	Glds. 100	Glds. 100	21 Tls 547,500 Tls. 547,500 f Tls. 63,914	Tls. 316,682	31-10-08	Interim Div. of Tls. 12½ 15 March Tls. 12½; 15 June & Tls. 15.00 15 Sept	5%	Tls. 1300 sellers
Peak Tramways Co., Ld. Do. (New)	1907	$750,000	25,000 50,000	$10 $10	$10 $1	21 Tls. 547,500 $20,000	$3,014	30-4-10	80 cents on fully paid shares & 8 cents on $1 paid shares for year ending 30-4-10	5½ 5	$14 sellers $1½ sellers
Philippine Co., Ld.	1904	$750,000	75,000	$10	$10	none	Ps. 18,640	31-12-08	None	---	$10 sellers
Robinson Piano Co., Ltd.	1900	$200,000	22) 4 000	$50	$50	$5,000	$61,138	31-8-08	6% for ½ year ending 30.9.07	---	$50 sellers
Shanghai-Sumatra Tobacco Co., Ld.	1902	Tls. 600,000	9) 30,000	Tls. 20	Tls. 20	Tls. 24,820 w Tls. 100,000	Tls. 5,250	31-10-08	No dividend this year	2	Tls. 155
South China Morning Post, Ld.	1903	$150,000	6,000	$25	$25	none	Dr. $31,096	31-8-09	None	---	$26 sellers
Steam Laundry Co., Ld.	1902	$100,000	20,000	$5	$5	none	$127,86	31-5-09	50 cents for year ending 30-5-10	8	$5½ sellers
Union Waterboat Co., Ltd.	1905	$500,000	15) 50,000	$10	$10	w $11,956		31-12-08	60 cents for year-end. 31-12-1908.	6½	$8
United Asbestos Oriental Agency, Ld.	1896	$100,000	10,000	$10	$4	$46,000	$342	31-5-09	60 cents per ordinary share for year ending 31-5-09	5	$11½ sellers
Watkins, Ltd.	1899	$100,000	10,000	$10	$10	none	$19,41	31-12-09	3½ for 1909	11%	$3
Watson (A. S.) & Co., Ld.	1886	$900,000	90,000	$10	$10	$300,000 e) $25,000	$1,776	31-12-09	3% for 1909	---	$6¾ sales
Weismann Limited	1904	$30,000	3,000	$10	$10	$12,250	$67	31-7-09	10 per cent for year endg. 31.7.08.	10%	$12 buyers
William Powell, Ld.	1901	$105,000	15,000	$7	$7	none	$782	30-6-09	Final of 30 cents making 80 cents year ending June 30th 1906	---	$2 sellers
Societe des Pulpes et Papeteries du Tonkin		660,000	13,200	50 Haiphong	25 Currency	---	..	---	First year	---	$30 (Hk.Cy.) sel.
RUBBERS											
Allagar Rubber Estates, Ltd.	1909	£85,000	29) 750,000	2/-	2/-	---	---	---		---	6/-
Anglo-Malay Rubber Co., Ltd.	1905	£150,000	1,500,000	2/-	2/-	---	---	---	80% for year ending 31.12.09	---	25/3
Balgownie Rubber Estate, Ltd.	1905	†† $200,000	‡‡ 20,000	†† $1	†† $1	$7,400	$11,205	31-3-09	100% for year ending 31.3.10	---	$14 [Singapore]
Castlefield Rub. Ld., [fully pd.]	1906	£35,000	27) 32,650	£1	£1	none	---	---		---	120/-
Damansara (Selangor) Rub. Co.	1906	£110,000	25 110,000	£1	£1	nil.	£2,220	31-12-08	50% for 1909	---	160/-
Golconda Malay Rubber Co.	1907	£80,000	26 80,000	£1	£1	nil.	nil.	---	25% for 1909	---	120/-
Highland & Lnd. Para R. Co. Do. Do. [fully paid] Do. Do. [partly paid]	1906	£310,000	=181,454 123,546	£1 £1	£1 15/-	£8,784	---	---	35% for 1909	---	115/-
Kamuning (Perak) Rb. & Tin Co. do do A Shares do do B Shares	1909	£200,000	950,000 105,000	2/- £1	1/- £1	nil.	nil.	---		---	6/6 prem.
Kuala Lumpur Rubber Co., Ltd.	1906	£180,000	180,000	£1	£1	£4,000	1,82	---	30% for 1909	---	180/-
Linggi Plantations, Ltd. (ord.) Do. Do. (7% pref.)	1895 Reconst	£100,000	×900,000 10,000	2/- £1	2/- £1	---	--- ---	--- ---	50 interim	--- ---	54/-
Ledbury Rubber Estates Ltd. Do. Do. (contrib.)	1908	£125,000	§§ 60,000 §§ 40,000	£1 £1	£1 7/6	---	---	---	17½% for 1909	---	85/-
Sagga Rubber Co. Ld.	1903	£20,000	24) 2,000	£1	£1	nil.	nil.	---	25% for 1909	---	270/-
Sandycroft Rubber Co.	1904	$100,000	50,000	$2	$2	$20,000	$1,275	31.1.08	150% for year ending 31.1.10	---	$31
Sekong Rubber Co., Ld	1908	£80,000	27) 80,000	£1	12/6	nil.	nil.	---		---	25/ prem.
Shelford Rubber State Ld.	1906	£65,000	65,000	£1	£1	nil.	£836	31.12.08	7½% for 1909	---	75/-
Singapore & Johore Rb. Co., Ld.	1903	$250,000	2,500	$2	$2	nil.	nil.	---	25% interim	---	$14
Sungei Choh. Rb. State Co., Ld.	1907	£45,000	45,000	£1	£1	nil.	nil.	---		---	105/-
Sungei Kapar Rubber Co.	1906	£110,000	23) 110,000	£1	£1	nil.	£3,448	31.12.08	37½% for 1909	---	16/6
Toerangie Rubber Co.	1910	30) £100,000	51,000	£1	7/6	---	---	---	First year	---	2/- prem.

LOANS AND DEBENTURES.	AGENTS FOR THE LOAN.	AMOUNT OF LOAN.	PAR VALUE.	OUTSTANDING BONDS.	WHEN PAYABLE.	CLOSING QUOTATIONS.	
China Government, 7 per cent. Silver Loan 1886 E	Hongkong & Shanghai Banking Corporation.	Tls. 767,200	Tls. 250	1914	Mar. 31st and Sept. 30th each year until Mar. 31st, 1917	par.	Plus interest
Hongkong Hotel Company, Ltd., 6 per cent. Mortgage Debentures of 1899 ‡		$750,000	$500	§ all	Half yearly, June 30th and December 31st	par	
Shanghai & Hongkew Wharf Company, Ltd., 6 per cent. Debentures of 1902		Tls. 543,900	Tls. 100	....	Half yearly, June 30th and December 31st	Tls. 103½	
Astor House Hotel Company, Ltd., 8 per cent. Debentures of 1903		Tls. 500,000	Tls. 100	....	Half yearly, January 1st and July 1st	102½	
Chinese Engineering & Mining Co., Ltd., 6 per cent. Debentures of 1903 †	....	£500,000	¶	£431,960	Half yearly, June 30th and December 31st	par.	
International Cotton Manufacturing Co., Ltd. 7% Debentures of 1901	Russo Chinese Bank	Tls. 500,000	Tls. 100	‖	Half yearly, March 31st and Sept. 30th	Tls. 97½.	

a Authorized capital $2,000,000.
b Building Reserve Account.
c Capital Reserve Fund.
d Depreciation Fund.
e Equalization of Dividend Fund.
f Exchange and Investment Fluctuation Account.
g Gold Reserve Fund
h Exchange Reserve Account.
i Insurance Fund.
j Reinsurance Fund.
k Contingencies Account.
l Legal Reserve Fund.
m Authorized Capital
n Sinking Fund.
o Raw Sugar Reserve Account.
p Premium on New Issue.
q Boiler Repairs and Renewals Account
r Repairs and Renewals Account.
s Silver Reserve Fund.
t Depreciation and Repair Account
u Underwriting Suspense Account.
v Special account
w Special Works Fund.
x Extra Reserve Fund.
y 72,560 owned by the Company.
z 7,200 shares unissued.
1 4,000 shares unissued.
2 First issue of 60,000, of which 10,411 unallotted.
3 5,000 shares unissued.
4 4,480 shares unissued.
5 5,000 shares unallotted.
6 1,616 shares unallotted.
7 75,000 shares unissued.
8 14,000 shares unissued.
9 17,000 shares unissued.
10 40,453 shares actually issued.
11 7,688 shares actually issued.
12 4,200 shares unissued.
13 500 shares unissued.
14 399 shares unissued.
15 22,277 shares unissued.
16 10,000 shares unissued.
17 Special shares are entitled to half of the profits.
18 Capital contributed by Chinese Government-Kuping Tls. 5,000,000.
19 12,000 issued only.
20 Typhoon and Floods Insurance Fund.
21 Special Cash Reserve.
22 1000 shares unissued.
23 10,000 shares unissued.
24 4595 part paid shares.
25 7,500 shares unissued.
26 10,000 shares unissued.
27 2,350 shares unissued.
28 25,000 shares unissued.
29 100,00 shares unissued.
30) 3.700 fully paid vendor shares and an option of 5,000 shares at par for 5 years granted to option holders.
*Based on last year's dividend.
** Based on present dividend.
§ 216 held by the Company.
‖ Only Tls. 134,000 taken up.
¶ In certificates of £20 and £100.
‡ Redeemable in 10 years, or at option of Comp. the Company giving 6 months notice.
† Redeemable at par at rate of £10,000 per annum from 31st December 1903 to 31st December 95.
*** Redeemable at par on 30th June, 1915.
Dr. Deficit.
†† Singapore dollars.
‡‡ 4,880 shares unissued.
× 16,756 shares unissued.
§§ 25,000 shares unissued.
4140 shares unissued.

ADDITIONAL SHANGHAI SHARE QUOTATIONS

July 29, 1910

STOCK	CLOSING QUOTATIONS	HIGHEST AND LOWEST PRICES DURING THE WEEK	CAPITAL	NO. OF SHARES	VALUE	PAID UP	RESERVE	LAST DIVIDEND	WHEN PAID
Oriental Consolidated Mining Co., Ltd	35[10		G. $5,000,000	500,000	G. $10	G. $10	none	Interim of Gold 50 for 1910.	June. 10, 1910
Vulcan Iron Works, Limited	Tls. 40		Tls. 500,000	1,000	Tls. 500	Tls. 500	—	Tls. 50 for year ended 31.8.06	Nov. 1, 1906
Yangtsze Wharf & Godown Co., Limited	Tls. 207		Tls. 250,000	2,500	Tls. 100	Tls. 100	Tls 50,000	Tls. 15 for 1909	April 1, 1910
Wei-hai-wei Land & Building Co., Limited	Tls. 9 nominal		Tls. 91,850	3,674	Tls. 25	Tls. 25	—	Interim of $2.00 for 1909	Aug. 3, 1909
Anglo-German Brewing Co., Limited	$85 buyers		$100,000	4,000	$100	$100	none	5% for 1909	Mar. 12, 1910
Butler Tile Works, Limited	Tls. 25		Tls. 60,000	1,200	Tls. 50	Tls. 50	—	Tls. 3 for year ending 31.3.09	June 8, 1909
Major Bros., Limited	Tls. 55		Tls. 300,000	6,000	Tls. 50	Tls. 50	—	——	—
Oriental Ice Company, Limited	Tls. 20		Tls. 130,000	2,600	Tls. 50	Tls. 50	—	First year	—
Scharffs Oil and Bone Mills, Ltd	Tls. 40		Tls. 200,000	4,000	Tls. 50	Tls. 50	—	First year	—
Shanghai Ice Company, Limited.	Tls. 12		Tls. 200,000	8,000	Tls. 25		—	3% for 1907	Mar. 14, 1908
Campbell, Moore & Co., Limited.	$10		$12,000	1,200	$10	$10	$9,000	$3 for 1905	Apr. 2, 1906
Dunning & Company, Limited	$35 sellers		$100,000	2,000	$50	$50	—	$5 year ending 28.2.08	Apr. 15, 1908
J. Llewellyn & Co., Limited	$60 nominal		$72,000	1,200	$60	$60	—	7.20 for 1909	May 1, 1910
Lane, Crawford & Company	$150		$250,000	2,500	$100	$100	—	Final of 3% making 6% for 1908	June 8, 1909
S. Moutrie & Company, Limited	$40		$250,000	5,000	$50	$50	—	$2 for year ended March 31, 1909	June 18, 1909
Weeks & Company, Limited	$23		$400,000	20,000	$20	$20	$40,000	Final of 6% making 10% for 1909	June 1, 1910
Dominion Rubber Co., Limited	Tls. 62½		Tls. 225,000	22,500	Tls. 10	Tls. 4	—	First year	—
Kalumpong Rubber Co., Ltd.	Tls. 700		Tls. 700,000	14,000	Tls. 50	Tls. 50	** Tls. 11,844.48	16% for 1908	Nov. 9, 1909
Senawang Rubber Estates Company, Limited	Tls. 1550		Tls. 250,000	2,500	Tls. 100 Tls. 100	Tls. 100 Tls. 75	—	——	—
Tebong Rubber and Tapioca Estate, Limited	Tls. 48		£76,000	76,000	£1	£1	—	——	—
Shanghai Mercury, Limited	Tls. 50 buyers		Tls. 105,500	2,100	Tls. 50	Tls. 50	—	Final of 6% making 16% year 1909.	June 22, 1910
Shanghai Mutual Telephone Co., Limited	Tls. 67½ buyers		Tls. 675,000	13,500	Tls. 50	Tls. 50	—	Tls. 3 for 1907	June 28, 1909
China Export, Import & Lumber Company, Limited	Tls. 75		Tls. 350,000	500	Tls. 100	Tls. 50	—	5 p. c. for 1909	May 1, 1910
China Printing Co., Limited	Tls.		Tls. 750,000	1,500	Tls. 50	Tls. 50	—	7% 1908	Apr. 18, 1909
Hirano Mineral Water Co., Ltd.	Y. 10		Y. 125,000	5,000	Y. 25	Y. 25	—	10%=yen 2½ for year ending 30th Sept. 08 Y. 1.20 for year ended Feb. 29	Apr. 26, 1909
E. E. Porter & Co., Limited	$50		$100,000	2,000	$50	$50	—	$6 for 1907	Apr. 22, 1908
Shanghai Electric & Asbestos Company, Limited	$21 sellers		$125,000	5,000	$25	$25	—	8% for year ended Feb. 28, 09	June 21, 1909
Shanghai Electric Construction Company, Limited	£6 sellers	£11	£320,000	32,000	£10	£10	—	First year	—

DEBENTURES

LOANS		PRICE—PLUS ACCRUED INTEREST	AMOUNT OF LOAN	OUTSTANDING	NOMINAL VALUE	RATE OF INTEREST	WHEN PAYABLE
Shanghai Municipal Debentures	1892	Tls. 92½	Tls. 50,000	Tls. 45,400	Tls. 100	5 %	June & Dec.
do	1893	,, 96	,, 125,000	" 32,000	" 100	5½ ,,	Do
do	1894	,, 105	,, 105,000	" 60,000	" 100	6 ,,	Do
do	1895	,, 92½	,, 115,000	" 32,600	" 100	5 ,,	Do
do	1896	,, 92½	,, 140,000	" 181,800	" 100	5 ,,	Do
do	1897	,, 92½	,, 268,800	" 268,400	" 100	5 ,,	Do
do	1898	,, 105	,, 300,000	" 60,000	" 100	6 ,,	Do
do	1900	,, 96	,, 83,900	" 31,700	" 100	5½ ,,	Do
do	1901	,, 105	,, 250,000	" 200,000	" 100	6 ,,	Do
do	1902	,, 105	,, 150,000	" 150,000	" 100	6 ,,	Do
do	1903	,, 105	,, 490,500	" 490,500	" 100	6 ,,	Do
do	1904	,, 105	,, 214,500	" 214,500	" 100	6 ,,	Do
do	1905	,, 105	,, 320,000	" 320,000	" 100	6 ,,	Do
do	1907	,, 105	,, 250,000	" 250,000	" 100	6 ,,	Do
Chinese Imperial Government Loan	1886 E	,, 250	,, 767,200	" 354,400	" 250	7 ,,	Mar. & Sept
Shanghai Land Investment Co., Debentures	1890	,, 103½	,, 250,000	" 250,000	" 100	6 ,,	May & Nov.
do	1892	,, 96	,, 250,000	" 250,000	" 100	5½ ,,	June & Dec.
do	1894	,, 103½	,, 250,000	" 250,000	" 100	6 ,,	Mar. & Sept.
do	1896	,, 92½	,, 250,000	" 250,000	" 100	5 ,,	June & Dec.
do	1900	,, 103½	,, 250,000	" 250,000	" 100	6 ,,	April & Oct.
do	1901	,, 104	,, 250,000	" 250,000	" 100	6 ,,	June & Dec.
do	1901	,, 96	,, 100,000	" 100,000	" 100	5 ,,	May & Nov.
do	1902	,, 103½	,, 400,000	" 400,000	" 100	6 ,,	June & Dec.
do	1905	,, 103¼	,, 250,000	" 250,000	" 100	6 ,,	Do
Shanghai Waterworks Co., Debentures	1909	,, 103	,, 815,900	" 815,900	" 100	6 ,,	Do
Perak Sugar Cultivation Co., Debentures	1902	,, 101	,, 200,000	" 200,000	" 100	7 ,,	April & Oct.
Shanghai Gas Co., Debentures	1909	,, 103	,, 800,000	" 800,000	" 100	5 ,,	Do
Shanghai and Hongkew Wharf Co., Debentures	1902	,, 102	,, 839,100	" 799,800	" 100	6 ,,	June & Dec.
Astor House Co., Debentures	1905	,, 103	,, 750,000	" 500,000	" 100	7 ,,	Do
British Municipal Council, Hankow	1901	Sh. ,, 105	H'kow Tls 100,000	H'kow Tls 100,000	" 100	7 ,,	June & Dec.
Shanghai Club Debentures	1907	,, 100	Tls. 170,000	Tls. 170,000	" 100	6 ,,	Do
Country Club Debentures		,, 97	,, 139,000	" 139,000	" 100	6 ,,	Do
do	1907	,, 97	,, 92,000	" 92,000	" 100	6 ,,	Do
Lane Crawford & Co., Debentures	1907	,, 102½	,, 110,000	" 110,000	" 100	7 ,,	Mar. & Sept.
Anglo-French Land Debentures	1908	,, 102	,, 250,000	" 250,000	" 100	6 ,,	June & Dec.
Central Stores Ltd. Debentures	1908	,, 102½	,, 250,000	" 250,000	" 100	8 ,,	Do
Shanghai Mutual Tel. Co. Debentures	1909	,, 102½	,, 350,000	" 200,000	" 100	6 ,,	Do

SINGAPORE SHARE QUOTATIONS

(COURTESY MESSRS. FRASER & CO., BROKERS, SINGAPORE, AUGUST 17, 1910)

Date of Formation.	Capital	Capital paid up	No. of Shares Issued	Issue Value	Paid up	Reserve	Last Dividend	Name	Buyers.	Sellers.
								MINING		
1903	$300,000	300,000	30,000	10	10	....	30% for year ending 31-3-10	Belat Tin Mining Co., Ltd.	3.25	4.00
1907	$300,000	225,000	22,500	10	10	....	....	Bruang Ltd.	4.75	5.50
1901	$600,000	600,000	60,000	10	10	25,000	6% for year ending 30-4-09	Bruseh Hydraulic Tin Mining Co., Ltd.	5.00	6.00
1907	$400,000	375,000	37,500	10	10	....	....	Kanaboi, Ltd.	2.75	3.00
1901	£60,000	60,000	60,000	1	1	....	2[- interim 1909	Kinta Tin Mines, Ltd.	16.00	16.50
1905	$150,000	99,000	9,900	10	10	6,485.68	35% for year ending 31-12-07	Kuantan Tin Mining Co., Ltd.	3.00	3.25
1906	£120,000	120,000	120,000	1	1	....	1[- interim 1909.	Lahat Mines Ltd.	8.50	9.00
1906	$450,000	450,000	45,000	10	10	....	....	Malacca Tin Dredging Co., Ltd.	1.00	2.00
1906	£30,000	30,000	30,000	1	1	....	....	Malaya and Siam Corporation Ltd.	7[6	10[-
1906	£250,000	179,500	500,000	5/-	5/-	....	....	Pahang Consolidated Co., Ltd.	5[6	7
1907	£100,000	80,000	80,000	1	1	....	....	Pengkalen, Ltd.	5.50	6.00
1904	£100,000	80,000	80,000	1	1	....	....	Pusing Bahru Tin Mines, Ltd	6.75	7.00
1904	£120,000	100,000	100,000	1	1	6,000	45% for year ending 30-6-07	Pusing Lama Tin Mines, Ltd.	----	3.00
1907	$450,000	300,000	30,000	10	10	....	....	Rahman Hydraulic Tin, Ltd.	9.75	10.25
1905	£27,000	27,000	27,000	1	1	....	1[- for 1907	Rambutan, Ltd.	11.50	12.50
1892	£200,000	200,000	200,000	1	1	4,873	1[2 paid April, 1910	Raub Aust. Gold Ming. Co., Ltd,	5.00	5.50
1905	£40,000	40,000	40,000	1	1	....	....	Redhills Tin Mining Co., Ltd.	3.00	3.50
1900	$110,000	110,000	22,000	5	5	....	3% for year ending 22-1-09.	Royal Johore Tin Mining Co., Ltd.	1.00	1.25
1907	$550,000	500,000	50,000	10	10	....	....	Salak South, Ltd.	1.50	3.00
1907	£80,000	80,000	80,000	1	1	....	....	Sempam Tin Mines, Ltd.	2.00	2.50
1906	$850,000	850,000	85,000	10	10	25,000	5% interim 1909	Serendah Hydraulic Tin Ming. Co., Ltd.	6.25	7.00
1899	$230.000	230,000	23,000	10	10	....	3% for ½ year ending 31-12-08	Sipiau Tin Co., Ltd.	1.00	1.50
1909	$200,000	$150,000	15,000	10	10	....	....	Sungei Gau Tin Mining Co., Ltd	3.00	5.00
1907	£90,000	70,000	70,000	1	1	....	1[6 interim 1909	Tekka, Limited.	21.50	22.50
1906	£150,000	150,000	150,000	1	1	....	1[- interim 1909	Tongkah Harbour Tin Dredging Co., Ltd.	9.00	9.50
1902	£160,000	160,000	160,000	1	1	....	3[- interim 1909	Tronoh Mines, Ltd.	14.25	15.00

SINGAPORE SHARE QUOTATIONS.—(CONTINUED.)

Date of Formation	Capital	Capital paid up	No. of Shares Issued	Issue Value	Paid up	Reserve	Last Dividend	Name	Buyers	Sellers.
								STERLING RUBBER		
1909	£85,000	75,000	750,000	2/-	2/-	......	......	Allagar Rubber Estates, Ltd	5/9	6/3
1905	£150,000	1,500,000	1,500,000	2/-	2/-	......	80% for 1909	Anglo-Malay Rub. Co., Ltd.	1.5.0	1.6.0
1909	£50,000	35,250	470,000	2/-	1/6	......	......	Batang Malaka Rubber Estates, Ltd.	0/6	1/- p.
1904	£30,000	20,187 10/-	19,000 4,750*f*	1	1	......	50% for 1909	Batu Caves Rub. Co., Ltd.	16.17.6	17.5.0
1906	£80,000	70,000	70,000*l**	1	5/-	......	2½% for 1909	Batu Tiga (Selangor) Rubber Co., Ltd.	5.5.0	5.10.0
1909	£100,000	74,454	57,816	1	1	......	......	Bukit Kajang Rubber Estates, Ltd	2.15.0	3.0.0
			22,184*n**	1	1	......	......	" " " *part paid*	2.5.0	2.7.6.p.
1907	£30,000	25,500	24,000	1	15/-	......	......	Bukit Lintang Rubber Estates, Ltd.	4.2.6	4.10.0
			6,000	1	1	......	......	" " " *part paid*	2.7.6	2.10.0p.
1903	£70,000	66,700	66,700	1	5	2,000	90% for 1909	Bukit Rajah Rubber Co., Ltd.	17.15.0	18.5.0
1906	£35,000	30,000	30,000	1	1	......	......	Castlefield (K.) R. Estate, Ltd.	6.0.0	6.5.0
1909	£225,000	175,000	1750,000	1	1	......	......	Chersonese (F.M.S.) Estates, Ltd	4/3	4/9
1904	£16,000	16,000	100,000	2/-	2/-	......	75% for 1909	Cicely Rubber Estates Co., Ltd.	2.3.6	2.5.6
			60,000	2/-	2/-	......	78¾% for 1909	" " " " *5% Pref.*	2.3.6	2.5.6
1905	£75,000	62,007	620,070	2/-	2/-	......	80% for 1909	Consolidated Malay Rub. Estates, Ltd.	1.6.9	1.7.6
1906	£110,000	102,500	102,500	2/-	2/-	1,000	50% for 1909	Damansara (Selangor) Rubber Co., Ltd.	8.5.0	8.15.0
1903	£600,000	447,200	447,200*a*	1	1	......	......	Duff Development Co., Ltd.	16/-6	17/6
1909	£45,000	40,000	400,000	1	1	......	15% for 1909	Edinburgh Rub. Estates, (Selangor) Ld.	14/-	15/-
1907	£80,000	70,000	70,000	2/-	2/-	......	25% for 1909	Golconda Rubber Co., Ltd.	6.0.0	6.7.6
1906	£310,000	305,000	305,000	1	1	8,784	35% for 1909	Highlands & Lowds. Para Rub. Co., Ltd.	5.15.0	6.0.0
1904	£50,000	30,000	30,000	1	1	2,500	25% interim	Inch Kenneth Rubber Estates, Ltd	15.2.6	15.17.6
1909	£200,000	143,750	775,000*p*	1	1	......	......	Kam. (P.) R. & T. Co., Ltd. "A" Shares	6/-6	7/6 p.
			105,000	2/-	1/-	......	......	" " " "B" "	---	nom.
1905	£65,000	65,000	65,000	1	1	......	10% for 1909	Kapar Para Rubber Estates, Co., Ltd.	10.2.6	10.15.0
1909	£35,000	£17,250	95,000	1	1	......	......	Kota Tinggi Johore Rubber Co., Ltd.	2/3	2/9
			155,000	2/-	2/-	......	......	" " " "	0/3	0/9 p.
1906	£180,000	180,000	180,000	2/-	1/-	.....	30% interim	Kuala Lumpur Rubber Co., Ltd	9.0.0	9.10.0
1907	£100,000	90,000	900,000	1	1	......	25% for 1909	Labu (F. M. S.) Rub. Co., Ltd.	16/6	17/6
1907	£320,000	£252,067/10/-	198,930*v*	2/-	2/-	......	27½% for 1909	Lanadron Rubber Estates, Ltd	5.12.6	6.0.0
			70,850	1	1	3,000	27½% for 1909	" " " *part paid*	4.7.6	5.0.0 p.
1908	£125,000	75,000	60,000*g**	1	15/-	......	17½% for 1909	Ledbury Rubber Estates Ltd.	4.5.0	4.10.0
			40,000	1	1	......	17½% for 1909	" " " *part paid*	2.0.0	2.10.0p.
1895	£100,000	98,324 8/-	883,244*w*	1	7/6	4,000	50% interim	Linggi Plantations Ltd.,	2.12.6	2.15.6
			10,000	2/-	2/-	......	7% for 1909	" " " *7% Pref.*	---	nom.
1907	£140,000	118,000	1,180,000*k*	1	1	......	12½% for 1909	London Asiatic R. & Produce Co., Ltd.	12/-	13/6.
1909	£220,000	147,500	50,000	2/-	2/-	......	......	Lumut Rubber Estates, Ltd.	---	nom.
			150,000	1	1	.....	......	" " " " *part paid*	1.7.6	1.10.0p.
1906	£400,000	300,000	185,000	1	13/-	......	10% interim for 1909	Malacca Rubber Plants., Ltd.	7.10.0	8.0.0
			115,000	1	1	......	" " "	" " " " *7½% Pref.*	7.10.0	8.0.0
1909	£210,000	175,000	1,750,000	1	1	.....	......	Merlimau Rubber Estates, Ltd	6/7½	7/3
1903	£30,000	22,500	225,000	2/-	2/-	......	125% for 1909	Pataling Rubber Estates Synd. Ltd	3.5.0	3.6.6
1906	£85,000	85,000	850,000	2/-	2/-	......	12½% interim 1909	Perak Rubber Plantations, Ltd	10/-	11/-
1909	£60,000	36,875	15,000*z**	2/-	2/-	......	......	Rembia Rubber Estates Ltd.	---	nom.
			35,000	1	1	......	......	" " " *6% Cum. Pref.*	9/-	10/6 p.
1904	£25,000	19,092	17,732*u* 2,268	1 1	12/6 1	......	25% interim	Sagga Rubber Company, Limited	13.0.0	14.00
1905	£100,000	100,000	71,378 28,622*l*‡	1 1	12/- 1	.....	......	Sapong Rubber and Tobacco Estates, Ltd.	1.5.6	1.7.6.
1907	£100,000	100,000	100,000	1	1	......	15% for 1909	Seafield Rubber Co., Ltd	7.5.0	7.10.0
1898	£30,000	30,000	300,000	2/-	2/-	3,000	287½% for 1909.	Selangor Rubber Co., Ltd	3.4.0	3.5.6
1909	£50,000	32,000	40,000	1	16/-	......	......	Sendayan (F. M. S.) Rubber Co., Ltd	2.0.0	2.5.0 p.
1906	£65,000	65,000	65,000	1	1	......	7½% for 1909.	Shelford Rubber Estate, Ltd	3.13.6	3.17.6
1909	£150,000	78,500	14,000*i*‡ 86,000	1 1	1 15/-	......	......	Sialang Rubber Estates, Ltd	1.7.6	1.10.0p.
1909	£120,000	100,000	100,000	1	1	.....	......	Singapore Para Rubber Estates, Ltd.	3.10.0	3.12.6
1906	£192,500	192,500	1.925,000	2/-	2/-	.....	7½% interim	Straits Settlements (B.) Rub. Co., Ltd	7/9	8/-3
1907	£45,000	45,000	45,000	1	1	.....	......	Sungei Choh Rub.Estate, Co.Ltd.	5.0.0	5.5.0
1906	£110,000	100,000	1,000,000	2/-	2/-	......	37½% for 1909	Sungei Kapar Rubber Co., Ltd	16/-	17/6
1907	£70,000	55,000	55,000	1	1	......	......	Sungei Salak Rubber Co., Ltd	3.17.6	4.5.0
1904	£50,000	50,000	50,000	1	1	......	......	Sungei Way (Selangor) Rub. Co., Ltd	5.17.6	6.5.0
1908	£150,000	60,000	36,000	1	1	......	......	Tebrau (Johore) Rubber Co	4.0.0	4.10.0
			64,000	1	7/6	......	......	" " " *part paid*	3.0.0	3.2.6 p.
1907	£200,000	170,000	170,000	1	1	.....	5% interim	United Serdang (S.) R. Plantations, Ltd.	6.5.0	6.12.6
1908	£85,000	65,000	650,000	2/-	2/-	.....	10% for year ending 30-6-09	United Sumatra Rubber Estates, Ltd.	11/6	12/6
1904	£60,000	50,600	506,000	2/-	2/-	.....	66⅔% interim 1909	Vallambrosa Rubber Co., Ltd.	2.4.0	2.6.0
								DOLLAR		
1909	$120,000	105,000	105,000*w**	1	1	......	......	Alor Gajah Rubber Estate, Ltd	2.15	2.25
1909	$750,000	700,000	140,000	5	5	...	......	Ayer Panas Rubber Estates, Ltd	8.00	8.25
1905	$200,000	151,200	151,200	1	1	5,250	40% interim	Balgownie Rub. Estate, Ltd	13.00	13.50
1910	$500,000	500,000	50,000	10	10	......	......	Bukit Timah Rubber Estates, Ltd	16.00	17.00
1910	$750,000	700,000	70,000	10	10	......	......	Changkat Serdang Estates, Ltd	10.75	11.25
1909	$300,000	300,000	300,000	1	1	.....	......	Glenealy Plantations, Ltd	2.20	2.40
1910	$200,000	144,285	12,857*m*‡	5	5	......	......	Haytor Rubber States, Ltd	---	nom.
			20,000	5	4	......	......	" " " " *part paid*	1.00	2.00 p.
1910	$600,000	150,000	30,000	10	5	......	......	Henrietta Estates, Ltd.	1.00	2.00 p.
1909	$250,000	200,000	20,000	10	10	.....	......	Indragiri (S.) R. and Gutta P. Co., Ltd.	17.00	18.00
1910	$350,000	291,000	11,000	5	5	......	......	Kelemak Rubber Estate, Ltd.	4.00	4.50
			59,000	5	4	......	......	" " " *part paid*	1.50	1 dis.
1907	$300,000	140,000	20,000	10	7	....	......	Kombok Rubber Co., Ltd	20.00	25.00 p.
1910	$1,000,000	1,000,000	500.000	2	2	......	......	Malakoff Rubber Co., Ltd.	2.50	2.75
1910	$1,250,000	1,250,000	250,000	5	5	......	......	New Singapore Rubber Co., Ltd.	7.00	8.00
1909	$400,000	400,000	80,000	5	5	......	5% interim	Pajam Limited	14.00	14.50
1909	$200,000	200,000	200,000	1	1	......	......	Pantai, Limited	1.50	1.75
1909	$500,000	450,000	45,000	10	10	......	7½% interim	Pegoh, Limited	27.00	27.50
1910	$450,000	295,000	45,000*f*‡	5	5	......	......	Port Dickson Rubber Co., Ltd	13.00	14.00
			35,000	5	2	.....	......	" " "	5.00	6.00 p.
							......	Pulo Daat Plantations, Ltd.	1.30	1.40
1910	$200,000	150,000	150,000	1	1	20,000	50% pending	Sandycroft Rubber Co., Ltd	28.50	29.00
1904	$100,000	100,000	50,000*b**	2	2	......	25% interim	Singapore & Johore Rub. Co. Ltd	13.00	13.50
1903	$450,000	417,300	208,650	2	2	......	......	St. Helena Rubber Coy., Ltd.	30.00	35.00
1909	$250,000	100,000	10,000	10	10	.....	......	Teluk Anson Rubber Estate, Ltd.	7.00	7.50
1909	$200,000	165,000	33,000	5	5	......	......	United Singapore Rubber Estates, Ltd.	1.75	1.85
1909	$1,000,000	637,500	737,500*y**	1 1	1 -/50	....	......	" " " " "	---	nom.
								GENERAL		
1903	£400,000	400,000	400,000	1	1	......	......	Singapore Electric Tramways, Co., Ltd.	4/3	4/6
1907	$1,500,000	1,065,150	25,000*d**	10	10	......	10% for year ending 31/12/08	Eastern Smelting Co. Ltd	---	10.00 n.
			116,450	10	7	......	10% for year ending 31-12-08	" " " *part paid*	---	6.00 n.
1898	$360,000	360,000	36,000	10	10	170,000	15% & 5% bon. for yr. end. 31-12-09.	Fraser & Neave, Ltd.	28.00	30.00
1905	$2,400,000	2,400,000	18,000	100	---	75,000	2½% for year ending 31-10-08	Howarth Erskine, Ltd.	58.00	60.00
			6,000	100	---	......	7% for year ending 31-10-08	" " *7% Pref*	90.00	95.00
1896	$1,000,000	1,000,000	6,000	100	100	40,600	12% for year ending 31-12-09	Katz Brothers, Ltd. *Deferred*	---	125.00
			4,000	100	100	......	8% " " " "09	" " *8% Cum. Pref*	---	nom.
1901	$34,000	34,000	3,400	10	10	......	20% for year ending 31-10-09	Maynard & Co., Ltd.	20.00	21.00
1899	$875,000	875,000	6,000	100	100	175,000	5% for year ending 31/12/09	Riley, Hargreaves & Co., Ltd	77.50	82.50
			2,750	100	100	......	7% for year ending 31/12/09	" " " " *7% Pref*	102.00	---
1897	£3,500,000	3,500,000	2,500,000	1	1	1,120,000	22½% for 1909	Shell Transport and Trading Co., Ltd	4.15.0	5.0.0
			100,000	10	10	......	......	" " " " " *Pref.*	11.5.0	12.0.0
1903	$600,000	250,000	25,000*n*	10	10	......	10% for year ending 30-6-09	Singapore Cold Storage Co., Ltd	19.00	20.00
1891	$30,000	30,000	600	50	50	23,000	10% for year ending 31-7-09	Singapore Dispensary Ltd.	50.00	52.50
1884	$200,000	200,000	2,000	100	100	75,000	15% for year ending 31-12-09	Straits Ice Co., Ltd	160.00	165.00
1890	$1,000,000	623,000	4,980	100	100	760,000*q*	5% interim	Straits Steam Ship Co., Ltd.	190.00	200.00
			2,500	100	50			" " " " " *part paid*	40.00	50.00 p.
1887	$3,000,000	3,000,000	300,000	10	10	130,000*r* 1,222,409	10% & 5% bon. for half yr. end. 31/3/10	Straits Trading Co., Ltd	57.00	57.50
								DEBENTURES		
								Howarth Erskine, Ltd. 6% $600,000	---	par.
								Riley, Hargreaves & Co., Ltd. 6%,284,000	1%	3% p.
								Singapore Electric Tramways, Co., Ltd. 5% £350,000	---	---
								Singapore Municipal 5% 1,878,000	---	nom.
								" " 4½% of 1907 1,600,000	6%	7% p.
								" " 4½% of 1909 1,000,000	7%	8% p.
								" " 4% 602,900	---	7% dis.

a { 152,800 unissued
43,949 6% debenture

e { 54,500 £1 Prefs. issued
45,500 £1 " unissued
100,000 5/- Ord. "

f 6,250 unissued

k £40,000 6% Debentures 220,000 unissued

p 175,000 unissued "A" shares

q Sundry Reserves.

r "

u 5,000 issued £1 prem.

v 50,220 unissued

w 16,756 "

*b** 221 7½% Debentures

*d** 8,550 unissued

*g** 25,000 "

*l** £10,000 Convertible 6% Debentures issued £10,000 do. unissued

*n** 20.000 unissued

*y** 262,500 "

*z** 10,000 "

i‡ 50,000 "

l‡ 6% Deb. Stock Convertible.

m‡ 7,143 unissued.

YOKOHAMA SHARE QUOTATIONS

COURTESY A. C. HUTTON POTTS, SHARE AND GENERAL BROKER, YOKOHAMA, AUGUST 25TH, 1910.

STOCKS.	CAPITAL.	NO. OF SHARES.	ISSUE VALUE.	AMOUNT PAID UP.	DATE.	LAST DIVIDEND.	FOR TERM.	CLOSING QUOTATION.
Brett & Co., Ltd.	-Y- 28,000	2,800	-Y- 10	-Y- 10	31-12-09	12½%	for 1 year	15 Sellers
Club Hotel, Ltd.	185,000	1,850	100	100	31-3-10	6%	for 1 year	70 Nominal
Grand Hotel, Ltd.	500,000	5,000	100	100	31-6-10	5%	for ½ year	95 Sales.
Helm Bros., Ltd.	186,000	3,720	50	50	31-12-10	17½%	for 1 year	85 Sales.
Langfeldt & Co., Ltd.	100,000	2,000	50	50	31-6-09	6%	for ½ year	60 Nominal.
C. Nickel & Co., Ltd. †	500,000	20,000	25	25	31-10-09	20%	for 1 year	50 Sales.
Thwaites, Limited	100,000	2,000	50	50	First Year	—	—	
Yokohama Engine and Iron Works *	500,000	10,000	50	50	31-5-09	—	for 1 year	50 Nominal
Oriental Hotel, Ltd., Ordinary	250,000	3,000	50	50	31-8-07	12%	for 1 year	50 Sales.
Oriental Hotel, Ltd., Preference		2,000	50	50		8%	for 1 year	52:50 Sales
The Union Estate and Investment Co., Ltd. ‡	1,000,000	10,000	100	100	30-9-09	6½%	for 1 year	100 Nominal.
The Clifford Wilkinson Tansan Mineral Water Co., Ltd. §	500,000	5,000	100	100	31-12-09	7%	for 1 year	100 Buyers.

† 285,000 unissued.
‡ 475,000 unissued.

*-Y- 390,000 issued.
§-Y- 375,800 issued.

DEBENTURE LOANS.	AMOUNT OF LOAN.	FACE VALUE OF DEBENTURES.	RATE OF INTEREST.	INTEREST PAYABLE.	CLOSING QUOTATION.
Brett & Company, Limited	11,500.00	100.00	7%	1 June and 1 Dec.	95 Sales.
Yokohama United Club	230,000.00	100.00	6%	30 June and 31 Dec.	102 Nominal.
Oriental Hotel, Limited	350,000.00	100.00	8%	1 April and 1 Oct.	103 Sales.
Union Estate and Investment Co., Limited	250,000.00	100.00	6%	30 June and 31 Dec.	95 Sellers.

JAPANESE STOCKS.	FACE VALUE.	AMOUNT PAID UP.	LAST DIVIDEND.	DIVIDEND PAYABLE.	CLOSING QUOTATION.
Bonds & Debentures.					
Exchequer Bonds 2nd issue	-Y-100	-Y-100	5%	March and Sept.	-Y-101.70
Exchequer Bonds 3rd issue	100	100	5%	March and Sept.	,, 101.70
Railway Bonds (Ko-Gobu)	100	100	5%	June and Dec.	,, 101.70
4% Imperial Loan Bonds (1st issue)	100	100	4%	June and Dec.	,, 96.00
4% Imperial Loan Bonds (2nd issue)	100	100	4%	March and Sept.	,, 97.00
Imperial 5% Bonds	100	100	5%	March and Sept.	,, 101.30
Special 5% Bonds (issued 1906)	100	100	5%	June and Dec.	,, 100.10
Yokohama Water Works Bonds	100	100	6%	June and Dec.	,, 105.00
Yokohama City Public Loan Bonds	100	100	6%	March and Sept.	,, 105.50
Osaka City Harbour Construction Bonds	100	100	6%	June and Dec.	,, 105.50
Osaka City Public Loan Bonds	100	100	6%	June and Dec.	,, 105.50
Kawasaki Dock Yards Co.'s Debentures	100	100	7%	June and Dec.	,, 104.00
Tokyo Race Associations "	500	500	30%	June and Dec.	,, 180.00
Railways & Electric Trams.					
Tokyo Railway Company, Limited	50	50	5 2/5%	June and Dec.	,, 72.65
Yokohama Electric Tramway Company, Limited	50	50	6%	July and Jan.	,, 55.50
Keihin Electric Tramway Company, Limited	50	50	6%	June and Dec.	,, 51.50
Southern Manchurian Railway Co., Ltd.	100	20	6%	June and Dec.	,, 46.00
Hanshin Electric Tramway Co., Ltd.	50	50	12%	May and Nov.	,, 131.00
Cotton Spinnings.					
Kanegafuchi Cotton Spinning Company, Limited	50	50	14%	July and Jan.	,, 104.00
Fuji Gassed-yarn Company, Limited	50	50	14%	July and Jan.	,, 88.95
Tokyo Cotton Spinning Company, Limited	50	50	8%	July and Jan.	,, 43.80
Imperial Hemp Weaving Company, Limited	50	50	12%	July and Jan.	,, 73.00
Nisshin Boseki Kabushiki Kaisha	50	17½	7%	—	,, 12.55
Sugar & Beer Cos.					
Dai-nippon Sugar Refinery Company, Limited	50	50	....	May and Nov.	,, 36.00
Ensuiko Sugar Refinery Company, Limited	50	20	20%	June and Dec.	,, 50.25
Dai-nippon Beer Company, Limited	50	50	12%	July and Jan.	,, 81.70
Kirin Brewery Company, Limited	50	50	7%	July and Jan.	,, 53.00
Docks & Steamships.					
Yokohama Dock Company, Limited	50	33	12%	June and Dec.	,, 63.50
Uraga Dock Company, Limited	50	50	....	July and Jan.	,, 7.50
Kawasaki Dockyard Company, Limited	50	50	12½%	Feb. and Aug.	,, 54.00
Nippon Yusen Kaisha	50	50	10%	May and Nov.	,, 98.00
Hokkaido Tanko S. S. Company, Limited	50	50	5%	July and Jan.	,, 29.00
Miscellaneous.					
Tokyo Electric Light Company, Limited	50	50	12%	June and Dec.	,, 104.70
Tokyo Gas Company, Limited	50	50	13%	July and Jan.	, 116.95
Yokohama Union Electric Light Company, Limited	50	50	14%	June and Dec.	,, 113.00
Fuji Paper Mills	50	50	6%	June and Dec.	,, 30.00
Otaru Timber Company, Limited	50	50	....	March and Sept.	,, 13.00
Hoden Petroleum Company, Limited	50	50	20%	April and Oct.	,, 70.00
Tokyo Rope Manufacturing Company, Limited	50	50	18%	June and Dec.	,, 112.00
Japan Horse Improvement Company, Limited	50	50	....	March and Sept.	,, 14.00
Tokyo Stock Exchange Company	50	50	15 1/5%	June and Dec.	,, 213.00
Osaka Electric Light Company, Limited	50	50	16%	July and Jan.	,, 142.00
Kobe Electric Light Company, Limited	50	50	14%	July and Jan.	,, 107.00

BANGKOK SHARE QUOTATIONS

(COURTESY MESSRS. EDWARDS & CO., BANGKOK, SIAM.) JULY 1, 1910

NAME.	BUYERS.	SELLERS.	LAST SALES.	ESTABLISHED.	CAPITAL.	NO. OF SHARES.	ISSUE VALUE.	AMOUNT PAID UP.	RESERVE FUND	LAST DIVIDEND
Siam Electricity Co., Ltd.	Tcs. 300	Tcs. 325	Tcs. 325	1901	£ 300,000	30,000	£ 10—	£ 300,000	Tcs. 491,338	12% Tcs. 4 bon.
Paknam Railway Co., Ltd.	,, 200	,, —	,, 220	1893	Tcs. 400,000	5,000	Tcs. 80	Tcs. 400,000	,, 37,566	14%
Siam Tramway Co., Ltd.	,, —	,, —	,, 108	1905	,, 1,450,000	6250 Shares 7250 Deb. 1000 P. Shares	,, 100	,, 2,230,000	,, 1,875	—
Meklong Railway Co., Ltd.	,, 90	,, 100	,, 90	1907	,, 2,230,000	22,300	,, 100	,, 223,000	,, 28,000	5%
Bangkok Manufact. Co., Ltd.	,, —	,, —	,, 132	1898	,, 400,000	4,000	,, 100	,, 400,000	,, 60,000	7% per for 6 months
Bangkok Dock Co., Ltd.	,, —	,, 135	,, 135	1865	,, 1,000,000	10,000	,, 100	,, 950,000	,, 220,000	
Siam Steam Packet Co.	,, 80	,, 909	,, 90	1898	,, 190,000	3,800	,, 50	,, 190,000	,, 34,000	5%
Siam Commercial Bank	,, 1,000	,, 1,500	,, 1,000	1906	,, 3,000,000	3,000	,, 1,000	,, 3,000,000	,, 338,850	4% for 6 mos.
Menam Motor Boat Co.	,, 75	,, 90	,, 90	1905	,, 200,000	2,000	,, 100	,, 200,000	—	none
Transport Co., Motor	,, —	,, 75	,, 100	1906	,, 200,000	2,000	,, 100	,, 200,000	—	—
Jenderata Rubber Co.*	,, —	,, 325— Ticals	,, 325 (for six calls)	1906	£ 40,000	4,000	£ 10	£ 7.-paid	—	—
Bagan Rubber Co.	,, —	,, 100	,, 100	1907	Tcs. 300,000	3,000	Tcs. 100	Tcs. 40 per share	—	—
Siam Steam Navigation Co., Ltd.	,, 300	,, 325	,, —	1909	,, 2,000,000	10,000	,, 200	—	,, 10,000	—
Siam Stone Works, Ltd.	,, —	,, —	100	1909	,, 350,000	3,500	,, 100	,, 350,000	—	6% half year
Kombok Rubber Co.	,, 25	,, 35	32	1906	$ 300,000	30,000	$ 100	$7, per Share	—	— —

PHILIPPINE SHARE REPORT

COURTESY B. A. GREEN, GENERAL, SHARE, BOND AND INVESTMENT BROKER.—*Manila, P. I., September 10, 1910.*

NAME	CLOSING QUOT'N	WHEN INCOR-PORATED	AUTHORIZED CAPITAL	ISSUE VALUE OF SHARES	NUMBER OF SHARES	NUMBER OF SHARES SUBSCRIBED	PAID UP	RESERVE FUND	WORKING ACCOUNT	DATE	LAST DIVIDEND
American Drug Store	......	1908	₱ 100,000	₱1,000	100	51	₱1,000	₱5,000	₱ 50,000	June 30, 1910.	......
Antamok Valley Mining Co	₱0.45	1909	500,000	1	500,000	320,000	1	......	......	......	First year
Banco Español Filipino	₱235.	1851	3,000,000	200	15,000	12,980	200	408,715	......	July 1, 1910.	5% First Half 1910
Bayhay Valley Oil Co	100.	1909	100,000	100	1,000	......	100	......	......	......	First year
Benguet Commercial Co	85.	1908	200,000	100	2,000	736	100	......	......	......	8% for 1906
Benguet Consolidated Mining Co	0.70	1903	2,000,000	2	1,000,000	495,000	2	......	......	......	......
Bua Mining Co.											
Common	90.	1905	750,000	100	7,000	3,366	100	......	......	......	......
Preferred	140.			100	500	500	100	......	......	......	......
Cadwallader-Gibson Lumber Co	......	1908	1,000,000	100	10,000	8,650	100	......	......	......	......
Camote-Clayton Mining Co	......	1909	400,000	10	40,000	26,000	10	......	......	......	First year
Compania Maritima	41.	1894	510,000	100	5,100	5,100	100	......	......	......	20% for 1902
East Batan Coal Mining Co	33.	1909	3,000,000	50	60,000	40,000	50	......	......	......	First year
El Varadero de Manila	70.	1885	450,000	100	4,500	4,500	100	......	......	......	3½% for 1909
Electrical Supply Co	......	1909	100,000	100	1,000	500	72	......	......	......	First year
Export & Import Lumber Co	......	1908	200,000	200	1,000	1,000	200	......	......	......	......
Escolta Press Inc	105.	1907	50,000	100	500	320	100	......	......	......	12% for 1909
Fabrica de Hielo de Manila	62.	1894	350,000	50	7,000	7,000	50	......	......	......	3% for 1st Qt. 1910
Germinal Cigar Factory	440.	1900	1,500,000	500	3,000	3,000	500	......	......	......	12% for 1909
H. E. Heacock & Co	......	1909	100,000	100	1,000	800	100	......	......	......	First Year
Headwaters Mining Co	10.	1908	600,000	10	60,000	35,000	10	......	......	......	......
Insular Lumber Co	140.	1907	2,000,000	200	10,000	9,000	200	......	......	......	......
Lepanto Mining Co	......	1906	1,000,000	100	10,000	8,000	100	......	......	......	......
Juan Seiboth Co	......	1908	150,000	20	7,500	500	20	......	......	......	......
La Concha Button Factory	95.	1905	75,000	100	750	530	100	......	......	......	15% for 1909
Los Banos Improvement Co	150.	1908	100,000	200	500	500	200	......	......	......	8% for 1908
Lambert, Springer Co	......	1908	200,000	1,000	200	80	1,000	......	......	......	......
Luzon Stevedoring Co	25.	1909	250,000	25	10,000	4,200	25	......	......	......	......
Luzon Sugar Refining Co	......	1882	700,000	100	7,000	7,000	100	......	......	......	3% for 1907
Manila Electric Ry. & Light Co	125.	1903	12,000,000	200	60,000	......	200	......	......	......	4% for 1909
Manila Hotel Co	100.	1909	400,000	100	4,000	3,500	100	......	......	......	Under Construction
Minas Carbon de Batan	240.	1902	1,000,000	200	5,000	1,523	200	......	......	......	......
Mindanao Herald Publishing Co	......	1907	15,000	100	150	75	100	......	......	......	½% for 1908
Paracale Gold Dredging Co	15.	1907	£10,000	£1	10,000	10,000	£1	......	......	......	£1 for 1908–9
Paracale Ext. Gold Dredging Co	10.	1909	₱450,000	₱10	45,000	......	₱10	......	......	......	First Year
Palomar Park Amusement Co	0.25	1908	300,000	1	300,000	......	1	......	......	......	......
Phil. Hemp Machine Co	......	1908	1,000,000	100	10,000	......	100	......	......	......	......
Philippine Publishing Co	120.	1907	600,000	200	3,000	2,200	120	......	......	......	5½% for 1910
Philippine Co., Ltd	10.	1904	750,000	10	75,000	75,000	10	......	......	......	......
Philippine Gold Dredging Co	10.	1907	200,000	10	20,000	20,000	10	......	......	......	......
Philippine Rosin & Turpentine Co	......	1908	150,000	1	150,000	70,000	1	......	......	......	......
Philippine Exploration Co	12.	1908	2,000,000	10	200,000	120,000	10	......	......	......	......
Port Banga Lumber Co	......	1908	100,000	100	1,000	934	100	......	......	......	......
Rosenstock Publishing Co	......	1908	75,000	10	7,500	6,000	10	......	......	......	......
San Nicolas Iron Works	100.	1901	300,000	500	600	600	500	......	......	......	15% for 1903
San Mauricio Gold Mining Co	35.	1908	4,000,000	200	20,000	20,000	......	......	......	......	......
Sanitary Steam Laundry	21.	1908	100,0000	20	5,000	3,000	20	......	......	......	......
Tarlac Railway Co	65.	1906	150,000	100	1,500	1,500	100	......	......	......	......
Tumbaga Mining Co	15.	1909	1,000,000	40	25,000	24,125	40	......	......	......	First Year
Union Hemp Machine Co	......	1909	50,000	10	5,000	2,600	10	......	......	......	First Year
Walter E. Olsen Co	100.	1909	500,000	100	5,000	2,033	100	......	......	......	First Year
Zamboanga Cold Storage Co	125.	1903	40,000	100	400	200	100	......	......	......	20% for 1909

PHILIPPINE BONDS

	DATED	AUTHORIZED	ISSUED	OUTSTANDING	PAR VALUE	RATE OF INT.	WHEN PAYABLE	LAST QUOTATION
Philippine Friar Land Bonds	Feb. 1st, 1904	$7,000,000	$7,000,000	$7,000,000	$ 100	4%	Feb. 1, 1914	104⅝
Public Works and Permanent Improvement Bonds	March 1, 1905	$5,000,000	$2,500,000	$2,500,000	$ 100	4%	March 1, 1915	104⅝
Do.	Feb. 1, 1906		$1,000,000	$1,000,000	$ 100	4%	Feb. 1, 1916	104⅝
Manila Sewer and Water Works Improvement Bonds	June 1, 1905	$4,000,000	$1,000,000	$1,000,000	$ 100	4%	June 1, 1915	104½
Do.	Jan. 2, 1907		$2,000,000	$2,000,000	$ 100	4%	Jan. 2, 1917	104⅝
Philippine Railway First Mortgage Four per cent Thirty Year Sinking Fund Gold Bonds	July 1. 1907	$15,000,000	$5,736,000	$5,736,000	$1000	4%	July 1, 1937	97

*Payment of interest guaranteed until maturity or redemption by the Philippine Government.

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Astor House Hotel Co	53
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